



A  
T R E A T I S E  
O N  
Civil Architecture,

IN WHICH  
The PRINCIPLES of that ART

Are laid down, and Illustrated by

A great Number of PLATES,

Accurately DESIGNED, and Elegantly ENGRAVED by the best HANDS.

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Their Royal Highnesses

The Prince of WALES and Princess Dowager of WALES.

---

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M DCC LIX.

# TREATISE

## CIVIL ENGINEERING

OF THE

ARTS AND

MANUFACTURES

OF THE

ARTS

AND

MANUFACTURES

OF THE

ARTS AND

MANUFACTURES

OF THE

ARTS



TO THE  
RIGHT HONOURABLE  
JOHN EARL OF BUTE,  
GROOM of the STOLE  
TO  
THE PRINCE,

This Book is humbly Dedicated

BY  
His LORDSHIP'S

Most Obedient Servant,

WILLIAM CHAMBERS.

RIGHT HONOURABLE

JOHN EARL OF BUTE

GEORGE OF THE GREAT

TO

THE PRINCE

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OF

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# P R E F A C E.

**A**MONGST the various Arts cultivated by Men, some are calculated for the uses of life, and adapted to supply our wants, or help our infirmities; some again are merely the instruments of luxury, being wholly contrived to flatter the vanity, or gratify the desires of mankind: whilst others are fitted to many purposes, contributing at the same time to the preservation, the amusement, and the grandeur of the human species.

ARCHITECTURE is of the latter kind; and, if considered in its whole extent, may be said to have a share in almost every convenience of life.

THE advantages arising to Society from Houses, are alone very considerable; as they have an influence both on the body and mind: for in countries where Men live in woods, in caves, or in miserable huts, exposed to the inclemencies of seasons, and under continual apprehensions of heat, cold, tempests, rain, or snow, they are indolent, stupid, and abject; their faculties are benumbed, and all their views limited to the supplying their immediate wants: but in places where the inhabitants are provided with commodious dwellings, in which they may breathe a temperate air, amidst the summer's heat and winter's cold; sleep, when nature calls, at ease and in security; study unmolested, and taste the sweets of every social enjoyment, we find them active, inventive, and enterprising, with bodies fit for labour, and minds turned to contemplation: Agriculture and Arts flourish among them, and they are plentifully provided with all the necessaries and conveniences of life.

INVENTION facilitates labour; and what mere strength and perseverance obtains with difficulty, ingenious contrivances produce with ease, and in abundance. Hence domestic wants are constantly supplied, and stores provided for foreign markets.

THEN Architecture prepares the way for Commerce: she builds ships, with ports and piers for their reception and security; forms roads and causeways in marshes, and other impracticable places; levels mountains; fills up vallies; throws bridges over deep and rapid rivers; turns the course of torrents; cuts canals; erects sluices; and conquers every obstacle that nature opposes to her progress; facilitating by these means the conveyance of Merchandize, and passage of travellers from one country to another.

COMMERCE brings wealth, and wealth introduces luxury. Pride and pleasure give birth to a thousand refinements; the greater part of which cannot subsist without the assistance of Architecture. Palaces, stately Dwelling-houses, magnificent Temples, public Squares, Mausoleums, triumphal Arches, and a number of similar inventions, are all either necessary instruments of pleasure, or striking marks of preeminence. Nor is there any other branch of superfluity so certainly productive of its design, so permanent in its effects, or so beneficial in its consequences, as Building. Rich Furniture, magnificent Dresses, numerous Domestics, brilliant Equipages, and elegant Tables, are secondary objects of grandeur, which dazzle only vulgar capacities, and are no sooner past than forgot: but the productions of Architecture are lasting monuments, command universal attention, and record to latest posterity the greatness, wealth, dignity, virtues, and achievements of those they commemorate.

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THE immediate and the most obvious advantages of Building are its employing and maintaining the indigent, converting materials of small value into the most stately productions of human skill, beautifying the face of a country, and multiplying the conveniences of life. But these, however great, are far from being the most considerable. The concourse of strangers, which is a certain consequence of Building, and the numerous train of Manufactures that owe their birth to Architecture, being at first contrived and still used to furnish and adorn its productions, which occupy millions of persons, and supply many lucrative branches of Commerce, are considerations of the utmost consequence. The advantages of Building extend to the remotest ages, and at this day the very ruins of *ANTIEN ROME* in a great measure support the present, by the numbers of travellers who visit the remains of that famous city.

NOR is Architecture less dexterous in defending, than ingenious in beautifying countries. Riches and Grandeur are strong incentives to invite the inroads of ambitious neighbours, or provoke the ravages of licentious banditti: but ships of war, batteries, fortified towns and passes, forts and citadels, controul disturbers of domestick quiet, and frustrate the attempts of foreign powers.

THUS it appears that Architecture, by furnishing Men with convenient habitations, procures them that ease of body, and vigour of mind, which are necessary for inventing and improving Arts; that when, by their industry or ingenuity, they have multiplied their productions so as to exceed domestick demands, she supplies the means of transporting them to foreign markets; and when, by Commerce, Individuals or Communities are enriched, she affords them a rational, noble, and benevolent method of enjoying their wealth, which will procure honour and pleasure to themselves and their descendants, dignity to the State, and profit both to their Contemporaries and to Posterity. She farther teaches them to defend their properties, and to secure their liberties, lives, and fortunes, from the attempts of lawless rapine, and unbounded ambition.

AN Art so instrumental to the happiness of Man, and so conducive to the wealth, fame, and security of kingdoms, naturally claims the protection and encouragement of good and wise Princes. In effect we find, that in all civilized Countries, and well-governed States, Architecture hath been attended to, and promoted with the utmost assiduity. The progress of other Arts depends on that of Architecture. When Building is encouraged, Painting, Sculpture, Gardening, and all other decorative Arts flourish of course; and these have an influence on Manufactures, even on the minutest mechanic productions: for Design is of universal advantage, and stamps a value on the most trifling performances; the consequences of which, to a trading people, are too obvious to require any illustration.

IT must not, however, be imagined, that Building, considered merely as heaping Stone upon Stone, can be of advantage, or reflect honour either on countries or particular persons. Materials in Architecture are like words in Phrasology; which singly have little or no power, and may be so arranged as to excite contempt; yet when combined with Art, and expressed with energy, they actuate the mind with unbounded sway. A good Poet can move, even with homely language; and the artful dispositions of an able Architect will give lustre to the vilest Materials, as the feeble efforts of an ignorant Pretender must render the most costly Enrichments despicable.

I HAVE

## P R E F A C E.

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I HAVE hitherto considered Architecture under its different divisions of Naval, Military, and Civil: I purpose, however, in the present Work to confine myself to the last of these Branches, as being of more general use; and shall endeavour to treat it in as accurate and satisfactory a manner as the nature of the Subject will permit; collecting from the Writings of others, or from my own Observations, whatever to me appears most interesting, and propereſt to give a juſt and diſtinſt Idea of this Noble Art.

It is not natural to ſuppoſe, that ſo difficult and ſo extenſive a Science as Architecture could at once riſe from nothing to the height of perfection; or that the firſt Reſtorers of the antient manner of Building could immediately bring it to ſuch a degree of purity as to render it incapable of further improvement. With all poſſible reverence for the memory of thoſe illuſtrious Artiſts, it muſt be granted, that they have been guilty of many omiſſions, and taught many errors. Their deſigns are, generally ſpeaking, incorrectly drawn, and extremely ill engraved; and the want of method and preciſion in treating their Subject renders the ſtudy of it, in their works, perplexing and diſagreeable. But later Writers have in a great meaſure ſupplied their omiſſions, and rectified their faults: No Subject hath been more amply treated of than Architecture, nor any by perſons more capable; inſomuch that few things remain either to be diſcovered or improved, every branch of the Art having been maturely conſidered, and brought very near the utmoſt degree of certainty of which it is capable.

NEVERTHELESS one thing of very great Uſe remains ſtill to be done, at leaſt in our language; which is, to collect into one volume what now is diſperſed in a great many, and to ſelect, from mountains of promiſcuous Materials, a Series of ſound Precepts and good Deſigns.

WHOEVER has applied to the ſtudy of Architecture will readily grant, that there is no purſuit more perplexing. The vague foundation on which the more refined parts of the Art are built, hath given riſe to ſuch a multiplicity of contradictory opinions, all of them ſupported by plausible arguments, that it is difficult to make a choice, or to diſtinguiſh the real from that which is merely ſpecious. The connections are frequently very diſtant, and it is neceſſary to trace a Precept through all the combinations, that can poſſibly exiſt in every Branch of the Art, before its truth or fallacy can be determined.

SUCH a Scrutiny implies an extent of Knowledge not eaſily attained, and which can only be the reſult of tedious and painful application. Hence moſt Men of Fortune, and even ſome Artiſts contenting themſelves with a ſuperficial tincture, are eaſily impoſed upon: for being unacquainted with any ſolid Principles, whereon to build their Judgment, they rate the merit of Performances by the reputation of their Authors, by the taſte of the Age in which they were produced, by common report, or ſome other ſtandard of equal invalidity.

A WORK of the kind above-mentioned, if properly conducted, would in a great meaſure obviate this inconveniency, and, leading to truth by eaſy and inviting paths, render the ſtudy of Architecture more frequent, and conſequently good Taſte more univerſal.

THE



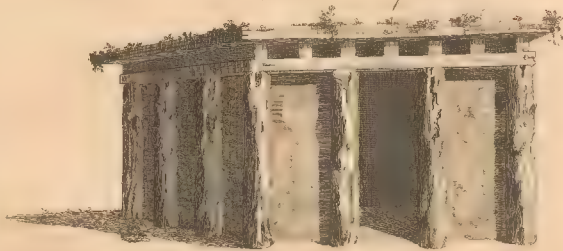
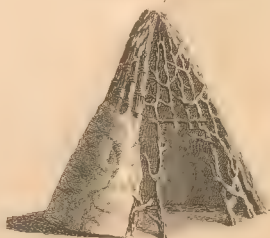
THE present Undertaking is an attempt towards such a Work. How far it will answer the design is not easy for me to determine : Men are but indifferent Judges of their own productions.

UNBIASED by any private Interest, nor blindly attached to any single System, I shall consider, with Candour and Impartiality, what has been hitherto produced on the Subject of Architecture ; extracting from thence what to me appears best. Particular times or persons will have no influence on the Choice. Every Age hath afforded bad Artists, and all Men, however excellent, have sometimes erred. Where Reason or Demonstration take place, they shall be employed ; but where they are deficient, the general received Opinion must prevail. Abstruse and fruitless arguments shall carefully be avoided ; nor will I puzzle the Ignorant with a number of indiscriminate examples ; judging it more eligible to offer a few that are good. Perspicuity, Precision, and Brevity will constantly be aimed at in the Style ; and in the Designs, Simplicity, Symmetry, Character, and Beauty of Form. If I can keep up to this Plan, I shall have laboured to some End : If I fall short of it, the difficulty and extent of the task must plead my excuse.





*The Primitive Buildings &c;*  
*The First sort of Huts*      *The Second sort of Huts*



*The Third sort of Huts which gave birth  
to the DORIC ORDER.*

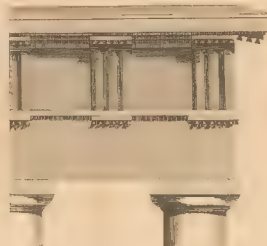
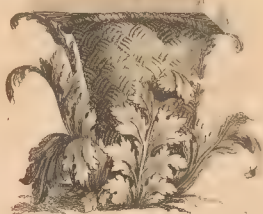


*The Doric Order in its  
Improved State*



*Origin of the Corinthian Capital.*

*The Doric Profile of the Temple of Minerva at Athens  
one of the most Ancient Monuments of that Order now existing.*



- |                 |               |                         |               |
|-----------------|---------------|-------------------------|---------------|
| A Plinth        | A Capital     | T Base of the Column    | Corona or Cup |
| B Cornice       | L Entablature | U Capital of the Column | 5 Capital     |
| C Frieze        | M Capital     | V Capital of the Column | 6 Capital     |
| D Architrave    | N Capital     | W Capital of the Column | 7 Capital     |
| E Capital       | O Capital     | X Capital of the Column | 8 Capital     |
| F Upper Cornice | P Capital     | Y Capital of the Column | 9 Capital     |
| G Capital       | Q Capital     | Z Capital of the Column | 10 Capital    |
| H Capital       | R Capital     | 1 Capital of the Column |               |
| I Capital       | S Capital     | 2 Capital of the Column |               |



# OF THE ORIGIN OF BUILDINGS.

**A**NTIENTLY, says VITRUVIUS, Men lived in woods, and inhabited caves; but in time, taking perhaps example from birds, who with great industry build their nests, they made themselves huts. At first they made these huts, very probably, of a Conic Figure; because that is a form of the simplest structure; and, like the birds, whom they imitated, composed them of branches of trees, spreading them wide at the bottom, and joining them in a point at the top; covering the whole with reeds, leaves, and clay, to screen them from tempests and rain.

BUT finding the Conic Figure inconvenient, on account of its inclined sides, they changed both the form and construction of their huts, giving them a Cubical Figure, and building them in the following manner:

HAVING marked out the space to be occupied by the hut, they fixed in the ground several upright trunks of trees to form the sides, filling the intervals between them with branches closely interwoven and covered with clay. The sides being thus completed, four large beams were placed on the upright trunks, which being well joyned at the angles, kept the sides firm; and likewise served to support the covering or roof of the building, composed of many joists, on which were laid several beds of reeds, leaves, and clay.

INSENSIBLY mankind improved in the Art of Building, and invented methods to make their huts lasting and handsome, as well as convenient. They took off the bark, and other unevennesses, from the trunks of trees that formed the sides; raised them probably above the dirt and humidity on stones; and covered each of them with a flat stone or slate, to keep off the rain. The spaces between the ends of the joists were closed with clay, wax, or some other substance; and the ends of the joists covered with thin boards cut in the manner of triglyphs. The position of the roof was likewise altered: for being, on account of its flatness, unfit to throw off the rains that fell in great abundance during the winter season, they raised it in the middle; giving it the form of a gable roof, by placing rafters on the joists, to support the earth and other materials that composed the covering.

FROM this simple construction the Orders of Architecture took their rise. For when buildings of wood were set aside, and Men began to erect solid and stately edifices of stone, they imitated the parts which necessity had introduced into the primitive huts; in so much that the upright trees, with the stones at each end of them, were the origin of Columns, Bases, and Capitals; and the beams, joists, rafters, and strata of materials, that formed the covering, gave birth to Archi-

traves, Frizes, Triglyphs, and Cornices, with the Corona, the Mutules, the Modillions and the Dentils.

THE first buildings were in all likelihood rough and uncouth; as the men of those times had neither experience nor tools: but when, by long experience and reasoning upon it, the Artists had established certain rules, had invented many instruments, and by great practice had acquired a facility in executing their ideas, they made quick advances towards perfection, and at length discovered certain manners of building, which succeeding ages have regarded with the highest veneration.

AT what time the Orders of Architecture, commonly called Grecian, were invented, or by whom, is not certainly known; but the account which VITRUVIUS gives of them is as follows:

DORUS, the son of Helenes and the Nymph Optica, king of Achaia and of all the Peloponnesus, having formerly built a temple to Juno in the ancient city of Argos, this temple happened to be in the manner which we call Doric; which manner was afterwards imitated in many other temples built in the several cities of Achaia.

ABOUT the same time the Athenians, after having consulted the Oracle of Apollo at Delphos, by the common consent of all Greece, sent into Asia thirteen Colonies, each under the command of a separate Captain, but all under the general direction of Ion, son of Xuthus and Creusa. Ion being arrived in Asia, conquered all Caria, and founded thirteen large cities: the inhabitants whereof having expelled the Carians and Leleges, called the country Ionia, in honour of Ion their leader, and erected temples; of which the first, dedicated to Apollo Panionius, was built after the manner of those they had seen in Achaia, which they called Doric, because there had been temples of the same sort built in the cities of the Dorians.

SOME time after they built a temple to Diana, in a manner different from the Doric; the structure being more delicate, and formed upon the proportions of a Female body, as the Doric had been on those of a robust Man. They adorned the Capital with Volutes, to represent the curls of a woman's hair, and cut flutings on the shaft of the Column, to express the folds of her garment; giving to this second manner of building the name of Ionic, because the Ionians were the first inventors of it.

THE third sort of Columns, which are called Corinthian, and represent the delicate figure of a young Girl, owe their birth to the following accident:

A young Girl of Corinth being dead, her nurse placed on her tomb a basket, containing certain trinkets in which she delighted when alive, and covered it with a tile to prevent the rain from spoiling them. The basket chanced to be placed on a root of Acanthus, which in the spring, pushing forth its leaves and sprigs, covered the sides of it; and some of them, that were longer than the rest, being obstructed by the corners of the tile, were forced downwards, and curled in the manner of Volutes.

CALLI-





*Regular Mouldings with their proper Ornaments*

*entire solid or Square*

*Ornaments for the Astragal*

*Astragal or Bead*



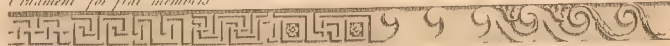
*Ornaments for the Frieze*

*Frieze or Frieze*



*Ornament for flat members*

*Decorative Weather Vane*



*Ornaments for the Profile*

*Chimney Profile or Quarter-round*



*Ornaments for Cases of different Sizes*

*Incised Ornamented Case*

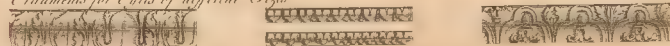


Fig. 1



*Ornaments for the Cyma*

*Cyma or S-curve Ornament*



*Ornaments of the Cavetto*

*Cavetto or Hollow*



*Ornaments for flat members*

*Ornament for the Cove*

*for the Cyma*



*Ornament for the members*



Fig. 2

Fig. 3

Fig. 4

Fig. 5

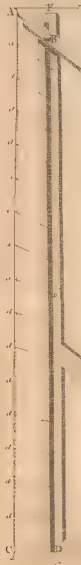


Fig. 6



CALLIMACHUS, the Sculptor, passing near the tomb, saw the basket, and in what manner the leaves had encompassed it: This new form pleasing him infinitely, he imitated it on columns which he afterwards made at Corinth, establishing and regulating, by this model, the manner and proportions of the Corinthian Order.

VILLALPANDUS treats this story of Callimachus as a fable, and maintains that the Corinthian Capital took its origin from an Order in Solomon's temple: and indeed it may be gathered from the Scriptures, that there were, in that building, Capitals formed upon the same principle with those of the Corinthian Order; so that though it may be indebted to the Greeks for many improvements, its origin is in all probability of more antient date than that assigned by Vitruvius.

BESIDES the three Orders said to be invented by the Grecians, there are two others of Italian origin; the first of which is thought to have been invented by the inhabitants of Tuscany, long before the Italians had any intercourse with the Greeks, from whence it is called the Tuscan Order: the second, though of Roman production, is but of modern adoption; the antients not having considered it as a distinct Order. It is composed of the Ionic and the Corinthian, and distinguished by the name of the Roman, or Composite Order. These are the five manner of Building invented by the Antients, which having been from time to time enriched with new improvements, were at last brought to the highest degree of perfection, and on account of the regularity and beauty of their forms called ORDERS.

*Of the Parts that Compose an Order of Architecture,  
and of their Enrichments.*

THE parts that compose an Order may be distributed into two different classes; in the first of which may be ranged all that have any analogy to the primitive huts, and represent some part that was necessary in their construction: \* Such are the Shaft of the Column, with the Plinth of its Base, and the Abacus of its Capital, representing the upright trees, with the stones on which they were placed, and those that covered them; likewise the Architrave and Triglyphs, representing the beams and joists; the Mutules, Modillions, or Dentils, which, all of them represent the Rafters; or some other pieces of Timber used to support the covering; and the Corona representing the beds of materials that composed the covering. All these may properly be distinguished by the name of Essential Members. The subservient parts, contrived for the use or ornament of the former, and commonly called Mouldings, may constitute the second class.

† THE essential parts were most probably the only ones used, even in the first stone buildings: for the Architects of those early times had certainly very imperfect Ideas of beauty in the productions of Art, and therefore contented themselves with barely imitating the rude model before them; but coming in time to compare the works of their own hands with animal

\* See Pl. of primitive buildings the third sort of huts.  
† Ibid the profile of the Temple of Theseus.

and vegetable productions, each species of which is composed of a vast diversity of forms, affording an inexhaustible fund of amusement to the mind, they could not but conceive a disgust at the frequent repetitions of square figures in their buildings; and therefore thought of introducing certain intermediate parts, which might seem to be of some use, and at the same time be so formed as to give a more variegated, and a more pleasing appearance to the whole composition: and this in all likelihood was the origin of Mouldings.

OF Regular Mouldings there are eight; which are the Ovolo, the Talon, the Cyma, the Cavetto, the Torus, the Astragal, the Scotia, and the Fillet.

THE names of these are allusive to their forms; and their forms are adapted to the uses which they are intended to serve.

THE Ovolo and Talon, as they are strong at their extremities, are fit for supports; the Cyma and Cavetto, though improper for that purpose, being weak in their extreme parts, and terminating in a point, are well contrived for coverings to shelter other members: for the tendency of their contour is very opposite to the direction of falling water; which for that reason cannot glide along their surface, but must necessarily drop. The Torus and Astragal, being shaped like ropes, are intended to bind and fortify the parts on which they are employed: but the use of the Fillet and Scotia, is only to separate and distinguish other mouldings, to give a graceful turn to the profile, and to prevent that confusion which would be occasioned by joining several curved members together.

THAT the inventors of these Mouldings meant to express something by their different figures will scarcely be denied; and that these were their destinations may be deduced, not only from their figures, but from the practice of the Antients in their most esteemed works: for if we examine the Pantheon, the Three Columns, the temple of Jupiter Tonans, the fragments of the Frontispiece of Nero, the Basilica of Antoninus, the Forum of Nerva, the Arches of Titus and Septimius Severus, the Theatre of Marcellus, and indeed almost every antient building, either at Rome, or in other parts of Italy, and France, it will be found that, in all their profiles, the Cyma and the Cavetto are constantly used as finishings, and never applied where strength is required; that the Ovolo and Talon are always employed as supporters to the essential members of the Composition, such as the Modillions, Dentils, and Corona; that the chief use of the Torus and Astragal is to fortify the tops and bottoms of Columns, and sometimes Pedestals, where they are frequently cut in the form of ropes; as on the Trajan Column, in the Temple of Concord, and on several fragments which I have seen both at Rome and at Nîmes in Languedoc; and that the Scotia is employed only to separate the members of Bases, for which purpose the Fillet is likewise used, not only in Bases, but in all kinds of Profiles.

HENCE it may be inferred that there is something positive and natural in these primary forms of Architecture, and consequently in the parts they compose; and that Palladio erred in employing the Cavetto under the Corona in three of his orders, and in making such frequent use, through all his profiles, of the Cyma as a supporting member.



member. Nor has Vignola been more judicious in finishing his Tuscan Cornice with an Ovolo; a Moulding extremely improper for that purpose, and productive of a very bad effect; for it gives a mutilated air to the whole Profile, which is the more striking, as it resembles exactly that part of the Ionic Cornice which is under the Corona.

OTHER Architects have been guilty of the like improprieties, and are therefore equally reprehensible.

THERE are various manners of describing the Contours of the Mouldings: but the simplest and best is to form them of  $\frac{1}{4}$  quadrants of circles, as in the annexed Designs; by which means the different depressions and swellings will be strongly marked, the transitions made without any angle, and the projections be agreeable to the doctrine of Vitruvius, and the practice of the Antients; those of the Ovolo, Talon, Cyma, and Cavetto, being equal to their height, that of the Scotia to one third thereof, and those of the curved parts of the Torus and Astragal to one half of it.

ON particular occasions, however, it may be necessary sometimes to encrease and at other times to diminish these projections, according to the situation or other circumstances attending the profile, as will hereafter appear. When it so happens the Ovolo, Talon, Cyma, and Cavetto, may either be described from the summits of equilateral triangles, or composed of quadrants of the Ellypsis; the latter of which is to be preferred, because it produces a stronger opposition of light and shade, and by that means makes the figures more distinct. The Scotia may likewise be formed of Ellyptical portions, or of quadrants of the circle, differing more or less from each other than in the annexed designs; by which means its projection may either be encreased or diminished: but the curved part of the Torus and Astragal must always be semicircular, and the encrease in their projection be by straight lines.

IN some Antiques, and likewise in various modern buildings, where the parts are far removed from the eye, or where, from the extraordinary size of the structure, it hath not been practicable to give every member its due projection, recourse hath been had to artifice in order to produce the desired effect. At St. Peter's of the Vatican this practice is very frequent, and I have given a section of the \* Cornice that finishes the pendentives of the Dome, which may serve as a guide in cases where the like is necessary.

IT will not, however, be improper to observe, that a too frequent use of this expedient is to be avoided; as it never succeeds, except where, by reason of the great distance, the artifice is undiscoverable: for the incisions and contortions made in the Mouldings entirely destroy the natural beauty of their form.

AN Assemblage of Essential parts and Mouldings is termed a Profile; and on the choice, disposition, and proportions of these depends the beauty or deformity of the Profile.

THE most perfect are such as are composed of few Mouldings, varied both in form and size, fitly applied with regard to their uses, and so disposed that the straight

† Pl. Mouldings.

\* Pl. Mouldings, Fig. I.

and curved ones succeed each other alternately. In every Profile there should be a predominant Member, to which all the others ought to be subservient, and seem made either to support, to fortify, or to shelter it from the injury of the weather: as in a Cornice, where the Corona is principal, the Cyma or Cavetto cover it, and the Modillions, Dentils, Ovolo, and Talon support it.

WHEN Ornaments are employed to adorn the Mouldings, some of them should be left plain, in order to form a proper repose: for, when all are enriched, the figure of the Profile is lost. In a Cornice, the Corona should not be ornamented, nor the Modillion Band; neither should the different Fascias of Architraves, the Plinths of Columns, Fillets, nor scarce any square Members be carved: for they are, generally speaking, either principal in the composition, or used as boundaries to other parts; in either of which cases their figures should be distinct and unembarrassed. The Dentil Band should remain uncut, where the Ovolo and Talon immediately above and below it are enriched; as in the Pantheon at Rome, and at St. Paul's in London: for when the Dentils are marked, particularly if they be small, according to Palladio's Corinthian design, the three members are confounded together, and, being covered with ornaments, are much too rich for the rest of the composition (as may be seen in several Antiques, and at the Mansion House in the City of London:) a fault carefully to be avoided, as the just and equal distribution of enrichments is, on all occasions, strictly to be attended to.

SCAMOZZI observes that Ornaments should neither be too frugally employed, nor distributed with too much profusion: their value will increase in proportion to the judgement and discretion shewn in their application. For, in effect, the Ornaments of Sculpture used in Architecture, are like Diamonds in a Lady's dress, with which it would be absurd to cover her face, and other parts that in themselves are beautiful.

VARIETY in Ornaments must not be carried to an excess. In Architecture they are only accessories; and therefore they should not be too striking, nor capable of long detaining the attention from the main object. Those of the Mouldings in particular should be simple and uniform, and never composed of more than two different representations; which ought to be cut equally deep, formed of the same number of parts, and nearly of the same dimensions, in order to produce one even uninterrupted tint through the whole, that so the eye may not be too strongly attracted by any particular part.

WHEN Mouldings of the same form and size are employed in one profile, they should be enriched with the same kind of ornaments; by which means the figure of the Profile will be better apprehended, and the artist will avoid the imputation of a puerile minuteness, neither to his own honour nor of any advantage to his building.

IT must be observed that all the ornaments of Mouldings are to be regularly disposed, and answering perpendicularly above each other, as at the Three Columns in Campo Vaccino. Where Middles of the Modillions, Dentils, Oves, and other Ornaments are all in a line; for nothing is more confused and unseemly than to distribute them without any kind of Order, as they are in most of the Antiques, and in  
most

most of the buildings of this city; where the middle of an Ove answers in some places to the edge of a Dentil, in some to its middle, and in others to the interval; the rest of the Ornaments being likewise distributed in the same careless manner. The larger parts are to regulate the smaller: all the Ornaments in the Entablature are to be governed by the Modillions, and these are to be dependant on the Intervals of the Columns, and so disposed that one of them may correspond with the Axis of each Column. It is farther to be observed that the Ornaments must partake of the character of the Order which they enrich, and those used in the Doric and Ionic Orders must be of a simpler kind, and grosser make, than those employed in the Composite and Corinthian.

WHEN Frizes, or other large Members are to be enriched, the Ornaments may be significant, and serve to indicate the Use of the Building, or the Qualities and Actions of the Owner: but it is a foolish custom to crowd every part with Arms, Crests, Cyphers, and Mottos: for the figures of these things are generally bad, and it betrays an unbecoming vanity in the Patron of the Structure.

IN Sacred places all obscene, grotesque, and heathenish representations ought to be avoided: for lewd fables, extravagant conceits, or instruments and symbols of Pagan worship, are very improper ornaments in houses consecrated to Christian purposes.

WITH regard to the manner of executing Ornaments, it is to be remembered, that, as in Sculpture a drapery is not estimable, unless its folds are contrived to indicate the parts and articulations of the body it covers, so in Architecture the most exquisite Ornaments lose all their value, if they alter or confound the form they enrich.

ALL Ornaments of Mouldings must therefore be cut into the solid, and never applied on their surface, as Davilere teaches; because it alters both their figure and proportion. The Profile must first be finished plain, and afterwards adorned; the most prominent parts of the Ornaments being equal with the surface of the Mouldings they enrich: and great care must be taken that the Angles, or Breaks, be kept perfect, and untouched with Sculpture; for which reason it is customary at the Angles of most Mouldings to place Leaves, the middle filament of which forms the angle.

THE method of the Antient Sculptors in the execution of Architectonic Ornaments, was to aim at a perfect representation of the object they chose to imitate; so that the Chestnuts, or Eggs, with which the Ovolo is commonly enriched in the Antiques, are cut round and almost entirely detached; as are likewise the Berries, or Beads, on the Astragal, which are generally as much hollowed into the solid of the body as the Moulding projects beyond it: but the Leaves, Shells, and Flowers, that adorn the Cavetto, Cyma, Talon, and Torus, are kept flat like the things they represent. In the application of their Ornaments they observed to use such as required a considerable Relief on Mouldings that in themselves are clumsy, as the Ovolo and Astragal; which, by means of the deep incisions made in them to form these enrichments, acquired an extraordinary lightness: but on more elegant parts, as the Cavetto, and Cyma, they employed thin bodies, which could be represented without entering too far into the solid. The Ornaments of their Cornices were boldly marked, that they might be distinguished from afar; but those of the Bases of Columns and Pedestals were slightly



expressed; both because it would be improper to weaken these parts, and also with a view to keep them clean; which would not be practicable, if there were any deep cavities in them, to harbour dust and filth.

WHEN objects are near, and liable to a close inspection, every Part of the Ornament should be expressed, and well finished; but when they are much exalted, the Detail may be slightly touched, or entirely neglected: for it is sufficient if the General Form be distinct, and the principal masses strongly marked. A few rough strokes, from the hand of a skilful master, are much more effectual, than the most elaborate finishings of an artless imitator.

### *Of the Orders of Architecture in general.*

A N Order consists of two principal Members, the Column and the Entablature; each of which is composed of three principal Parts. Those of the Column are the Base, the Shaft, and the Capital; and those of the Entablature are the Architrave, the Frieze, and the Cornice. All these are subdivided into many lesser parts, whose number, form, and dimensions characterize each order, and express the degree of strength, delicacy, richness, or simplicity peculiar to it.

OF the Five Orders, three are called Grecian; to wit, the Doric, the Ionic, and the Corinthian; and two Latin, the Tuscan, and the Composite.

THE simplest and most solid of all these is the \* Tuscan. It is composed of few Parts, devoid of Ornaments, and of a Construction so massive, that it seems capable of supporting the heaviest burden; whence it is, by Sir H. Wotton, compared to a sturdy labourer in homely apparel.

THE Doric † is next in strength to the Tuscan; and, being of a grave, robust, and masculine aspect, is by Scamozzi called the Herculean. As it is the most antient of all the Orders, it retains more of the structure of the primitive huts than any of the rest; having Triglyphs in its Frieze, to represent the ends of the Joists; and Mutules in its Cornice, to represent the Rafters; its Column being likewise, in various Antiques, executed without a Base, in imitation of the trees used in the first buildings, without any Plinths to raise them above the ground.

THE Ionic § is of a more slender make than either of the abovementioned Orders. Its appearance is simple, yet graceful and majestic; its Ornaments are few, nor is there any thing exaggerated, or remarkably striking, in any of its Parts: so that it is not improperly compared to a Sedate Matron, in decent rather than magnificent attire.

THE Corinthian ||, says Sir H. Wotton, is a Column lasciviously deckt, like a wanton curtezan. Its proportions are extremely elegant. It is divided into a great

\* Pl. of Orders.

† Pl. of Orders.

§ Pl. of Orders.

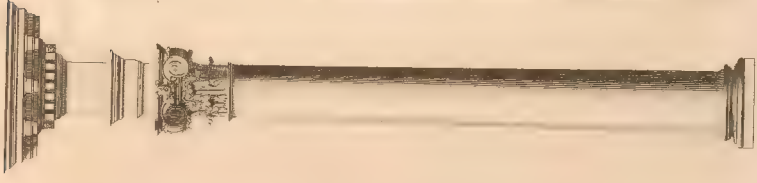
|| Pl. of Orders.

*Corinthian*



*Frontonius*

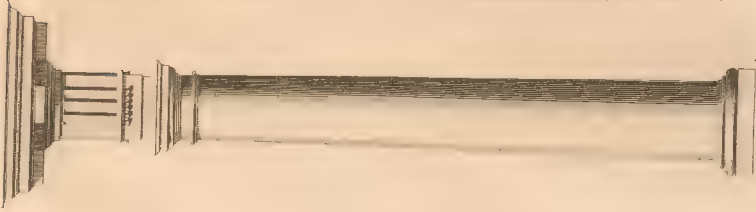
*Roman*



*Ionic*



*Doric*



*Barbaric*



*Frontonius*

*The Orders of the Antients.*





variety of Members, and enriched with a profusion of Ornaments. Scamozzi calls it the Virginal: and indeed it has all the delicacy in its make, with all the gayety, gaudiness, and affectation in its dress, peculiar to young Girls.

THE Composite \* is, properly speaking, only a species of the Corinthian; and therefore retains, in a great measure, the same character.

To give a striking idea of these different properties, and to render the comparison between the Orders more easy, I have represented them all of the same height; by which means the gradual encrease of delicacy and richness is easily perceivable; as are likewise the relations between the intercolumniations of the different Orders, and the proportions which their Pedestals, Imposts, Archivolts, and other Parts with which they are accompanied, bear to each other.

THE proportions of the Orders were, by the Ancients, formed on those of the Human Body; and consequently it could not be their intention to make a Corinthian Column, (which, as Vitruvius observes, is to represent the delicacy of a young Girl), as thick and much taller than a Doric one, which is designed to represent the bulk and vigour of a full grown man.

VIGNOLA, Palladio, Scamozzi, Blondel, Perrault, and many others, have nevertheless considered them in this light: that is, they have made the Diameters of all their Orders the same, and consequently their Heights encreasing; which, besides giving a wrong idea of the character of these different Compositions, hath occasioned many of the errors and false reasonings, with which their works abound.

COLUMNS, in the opinion of Scamozzi, should not be less than seven of their diameters in height, nor more than ten; ~~the former being~~ a good proportion in the Tuscan, and the latter in the Corinthian Order. The practice of the Ancients, in their best works, is conformable to this precept: for which reason I have, according to the doctrine of Vitruvius, made the Tuscan Column seven diameters in height, the Doric eight, and the Ionic nine, (as Palladio and Vignola have done,) and the Corinthian and Composite ten; which last is a mean between the proportions observed in the Pantheon, and in the three Columns, both which are accounted excellent models of the Corinthian Order.

THE height of the Entablature, in all the Orders, I have made one quarter of the height of the Column; which was the common practice of the Antients, who, in all sorts of Entablatures, seldom exceeded or fell much short of that measure.

NEVERTHELESS Palladio, Scamozzi, Alberti, Barbaro, Cataneo, de L'Orme, and others of the Modern Architects, have made their Entablatures much less in the Ionic, Composite, and Corinthian Orders, than in the Tuscan or Doric. This, on some occasions, may be not only excusable but highly commendable; particularly where the intercolumniations are large, (as in a second or third Order,) or in private houses, or inside decorations, where lightness may be preferred to dignity, and where

\* Pl. of Orders.

expende, and every impediment to the conveniency of the fabrick, is carefully to be avoided: but to set entirely aside a proportion, which seems to have had the general approbation of the Antient Artists, is presuming too far. The reason alledged, in favour of this practice, is the weakness of the Columns in the Delicate Orders, which renders them unfit for supporting heavy burdens. Where the Intervals are fixed, as in a Second Order, or in other places where wide Intercolumniations are absolutely necessary, the reason is good; but, if the Artist is at liberty to dispose his Columns at pleasure, the simplest and most natural way of conquering that difficulty, is to employ more Columns by placing them nearer to each other, as was the custom of the Antients. And it must be remembered, \* that, though the height of the Entablature, in a Delicate Order, is made the same as in a Massive one, yet it will not, either in reality or in appearance, be so heavy: for the quantity of matter in the Corinthian Cornice A is considerably less than in the Tuscan Cornice B, and the number of Parts that compose the former will make it appear far lighter than the latter.

WITH regard to the Parts of the Entablature, I have followed the method of Serlio in his Ionic and Corinthian Orders, and of Perrault, who in all his Orders, excepting the Doric, divides the whole height of the Entablature into ten equal parts; three of which he gives to the Architrave, three to the Frize, and four to the Cornice: and in the Doric Order he divides the height into eight parts; of which two are given to the Architrave, three to the Frize, and three to the Cornice.

THESE measures deviate very little from those observed in the greatest number of Antiques now extant at Rome, where they have stood the test of many Ages; and their simplicity renders them singularly useful in Composition, as they are easily remembered and easily applied.

OF two manners used by Architects to determine the Dimensions of the Mouldings, and the lesser Parts that compose an Order, I have chosen the simplest, readiest, and most accurate; which is by the Module, or semi-diameter of the Column, taken at the bottom of the Shaft, and divided into thirty Minutes.

YET there are many who prefer the method of measuring by equal parts; imagining that beauty depends on the simplicity and accuracy of the relations, between the whole body and its members, and alledging that dimensions, which have evident affinities, are better remembered than those, whose relations are too complicated to be immediately apprehended.

WITH regard to the former of these suppositions, it is evidently false: for the real relations, subsisting between dissimilar figures, have no connection with the apparent ones: and with regard to the latter, it may or may not be the case, according to the degree of accuracy with which the partition is made. For instance, in dividing the Attic Base, (which may be numbered among the simplest Compositions in Architecture) according to the different methods, it appears to me as easy to recollect the

\* Fig. 2. of Mouldings.

numbers 10,  $7\frac{1}{2}$ ; 1,  $4\frac{1}{4}$ ; 1,  $5\frac{1}{4}$ ; as to remember that the whole height is to be divided into three equal parts, that two of these three are to be divided into four, that three of the four are to be divided into two, and that one of the two is to be divided into fix, which are to be divided into three. But admitting it were easier to remember the one than the other, it doth not seem necessary, nor even advisable, in a Science, where a vast diversity of knowledge is required, to burden the memory with a thousand trifling dimensions. If the general proportions be known, it is all that is requisite in composing; and when a design is to be executed, it is easy to have recourse to figured drawings or prints.

THE trouble and loss of time in measuring by equal parts are very considerable; seeing it is necessary to form almost as many scales as there are different members to be divided: whereas the use of the Module is universal throughout the Order, and all its combinations; and being susceptible of the minutest divisions, the dimensions may be speedily determined, with the utmost accuracy; which, by the method of equal parts, cannot be done without great labour and expence of time.

COLUMNS, in imitation of trees, from which they drew their origin, are tapered in their Shafts. In the Antiques the diminution is variously performed; beginning sometimes from the foot of the Shaft, and at others from one quarter, or one third of its height; the lower part being perfectly Cylindrical. The former of these was most in use amongst the Antients, and being the most natural and graceful ought to have the preference, though the latter hath been more universally practised by Modern Artists.

The first Architects, says Mr. Auzoult, probably made their Columns in freight lines, in imitation of trees; so that their Shaft was a Frustrum of a Cone: but finding this form abrupt and disagreeable, they made use of some curve, which, springing from the extremities of the superiour and inferiour diameters of the Column, swelled between the sides of the Cone, and by that means gave a more pleasing figure to the Contour.

VITRUVIUS, in the second chapter of his third book, mentions this practice, but in so obscure and cursory a manner, that his meaning hath not been understood; and several of the modern Architects, intending to conform themselves to his doctrine, have made the diameters of their Columns greater in the middle than at the foot of the Shaft. Leon Baptista, Alberti, and others of the Florentine and Roman Architects, have carried this to a very great excess; for which they have been justly blamed, as it is neither natural, reasonable, nor beautiful.

MONSIEUR Auzoult observes that a Column, supposing its Shaft to be the Frustrum of a Cone, may have an additional thickness in the middle, without being swelled there beyond the bulk of its inferiour parts, and supposes the addition mentioned by Vitruvius to signify nothing but the encrease towards the middle of the Column, occasioned by changing the freight line, which at first was in use, for a curve.

THIS supposition is extremely just, and founded on what is observed in the works of Antiquity; where there is no instance of Columns thicker in the middle than at the bottom,



all have the swelling hinted at by Vitruvius, all of them being terminated by curves; some Granite Columns excepted, which are bounded by straight lines; a proof, perhaps, of their Antiquity, or of their having been wrought in the Quarries of Egypt, by bungling and unskilful workmen.

MONSIEUR Blondel, in his book entitled *Resolution des quatre principaux Problèmes d'Architecture*, teaches various manners of diminishing Columns; the best and simplest of which is by means of the instrument which Nicomedes invented to describe the First Conchoid: for this, being applied at the Bottom of the Shaft, performs at one sweep both the swelling and the diminution; giving such a graceful form to the Column, that it is universally allowed to be the most perfect practice hitherto discovered. The Columns in the Panthæon, accounted the most beautiful among the Antiques, are made in this manner; as appears by the exact measures of one of them to be found in Desgodet's Antiquities of Rome.

To give an accurate idea of the operation, it will be necessary first to describe Vignola's method of diminution, on which it is grounded. As to this second method, says Vignola, it is a discovery of my own; and although it be less known than the former, it will be easily comprehended by the figure. Having therefore determined the measures of your Column, (that is to say, the Height of the Shaft, and its inferior and superior Diameters), \*draw a line indefinitely from C through D, perpendicular to the Axis of the Column: this done, set off the distance C D, which is the inferior Semi-Diameter, from A, the extreme point of the superior Semi-Diameter, to B, a point in the Axis; then from A, through B, draw the line A B E, which will cut the indefinite line C D in E; and, from this point of intersection E, draw through the Axis of the Column any number of rays as E b a, on each of which, from the Axis towards the Circumference, setting off the interval C D, you may find any number of points, a, a, a, through which if a Curve be drawn, it will describe the swelling and diminution of the Column.

THOUGH this method be sufficiently accurate for practice, especially if a considerable number of points be found, yet, strictly speaking, it is defective; as the curve must either be drawn by hand, or by applying a flexible ruler to all the points; both of which are liable to variations. Blondel therefore, to obviate this objection, (after having proved the curve passing from A to C through the points a, a, to be of the same nature with the First Conchoid of the Antients), employed the instrument of Nicomedes to describe it; the construction of which is as follows:

HAVING determined, as above, the Length of the Shaft, with the inferior and superior Diameters of the Column, and having likewise found the length of the line C D E, take three rulers, either of wood or metal, as F G, I D, and A H; of which let F G and I D be fastened together at right Angles in G. Cut a dove-tail groove in the middle of F G, from top to bottom; and at the point E on the ruler I D, (whose distance, from the middle of the groove in F G, is the same as that of the point of intersection from the Axis of the Column,) fix a pin; then on the ruler A H set off the distance A B, equal to C D the inferior Semi-Diameter of the Column, and at the point B fix a button, whose head must be exactly fitted to the Groove made in F G, in which

\* Fig. 3. Pl. of Mouldings.

it is to slide; and, at the other extremity of the ruler A H, cut a slit or canal from H to K, whose length must not be less than the difference of length between E B and E D, and whose breadth must be sufficient to admit the pin fixed at E, which must pass through the slit, that the ruler may slide thereon.

THE instrument being thus completed, if the middle of the groove, in the ruler F G, be placed exactly over the Axis of the Column, it is evident that the ruler A H in moving along the groove, will with the extremity A describe the curve A a C; which curve is the same as that produced by Vignola's method of diminution, supposing it done with the utmost accuracy: for the interval A B, a b is always the same; and the point E is the origin of an infinity of lines, of which the parts B A, b a, b a, extending from the Axis to the circumference, are equal to each other and to D C. And if the rulers be of an indefinite size, and the pins at E and B be made to move along their respective rulers, so that the intervals A B and D E may be augmented or diminished at pleasure, it is likewise evident that the same instrument may be thus applied to Columns of any size.

IN the remains of Antiquity the quantity of the diminution is various; but seldom less than one eighth of the inferior Diameter of the Column, nor more than one sixth of it. The last of these is by Vitruvius esteemed the most perfect. Vignola has employed it in four of his Orders, as I have done in all of them; there being no reason for diminishing the Tuscan Column more, in proportion to its Diameter, than any of the rest, though it be the doctrine of Vitruvius, and the practice of Palladio, Vignola, Scamozzi, and almost all the modern Architects. On the contrary, as Perrault observes, its diminution ought rather to be less; as it actually is in the Trajan Column, in which it is only one ninth. For even when the same proportion is kept through all the Orders, the absolute quantity of the diminution in the Tuscan Order, supposing the Columns of the same height, exceeds that in the Corinthian, in the ratio of ten to seven; and if, according to the common practice, the Tuscan Column be less, by one quarter, at the top than at its foot the difference between the diminution in the Tuscan and in the Corinthian Columns, will be as fifteen to seven; and in the Tuscan and Doric nearly as fifteen to nine: so that notwithstanding there is a very considerable difference between the lower Diameters of a Tuscan and of a Doric Column, both being of the same height, yet the Diameters at their top will be very nearly equal; and consequently the Tuscan Column will in reality be no stronger than the Doric one, which is repugnant to the character of the Order.

VITRUVIUS allots different degrees of diminution to Columns of different heights; giving to those of fifteen foot one sixth of their Diameter; to such as are from twenty to thirty foot one seventh; and when they are from forty to fifty foot high one eighth only; observing that as the eye is easily deceived in considering distant objects, which always seem less than they really are, it is necessary to remedy the deception by an encrease of their dimensions, otherwise the work will appear ill constructed and disagreeable.

MOST of the modern Architects have taught the same doctrine; but Perrault in his notes, both on this passage and on the second chapter of the sixth book, endeavours to prove the absurdity thereof. In fact it is on most occasions, if not on all, an evident error, which Vitruvius and his followers have probably been led into through a neglect of combining circumstances. For, if the validity of Perrault's arguments be not assented to, and it is required to judge according to the rigour of Optical laws, it must be remem-

bered that the proper point of view, for a Column of fifty foot high, is not the same as for one of fifteen; but on the contrary more distant, in the same proportion as the Column is higher; and that consequently the apparent relation between the lower and upper diameters of the Column will be the same, whatever be its size: for if we suppose \* A to be a point of view, whose respective distance from each of the Columns, f g, FG, is equal to the respective heights of each, the triangles f A g, F A G will be similar, and A f or A h, which is the same, will be to A g, as A F, or its equal A H, is to A G: therefore, if d e, be in reality to b c, as D E is to B C, it will likewise be apparently so; for the angle d A e will then be to the angle b A c, as the angle D A E is to the angle B A C; and if the real relations differ, the apparent ones will likewise differ.

I HAVE supposed the eye of the spectator to be in a line perpendicular to the foot of the Shaft; but if the Columns be proportionably raised to any height above the eye, the argument will still remain in force; as the point of view must of course be proportionably more distant: and even when Columns are placed immediately on the ground, which seldom is the case, the alteration occasioned by that situation is too trifling to deserve notice.

WHEN therefore a certain degree of diminution, which by experience is found pleasing, hath been fixed upon, there will be no necessity for changing it, whatever be the height of the Column, provided the point of view is not limited: but in close places, where the spectator is not at liberty to chuse a proper distance for his point of sight, the Architect, if he inclines to be scrupulously accurate, may vary: though it is in reality a matter of no importance; as the nearness of the object will render the image thereof indistinct, and consequently any small alteration imperceptible.

SCAMOZZI, who esteems it an essential property of the delicate Orders, to exceed the massive ones in height, has applied the above cited precept of Vitruvius to the different Orders; having diminished the Tuscan Column one quarter of its diameter, the Doric one fifth, the Ionic one sixth, the Roman one seventh, and the Corinthian one eighth. In the foregoing part of this Chapter I have shewn the fallacy of his notion with regard to the heights of his Orders, and likewise endeavoured to prove the error of diminishing the Tuscan Column more than any of the others; so that it will be needless to say any more in this place: for, as the case is similar, the same arguments may be here employed.

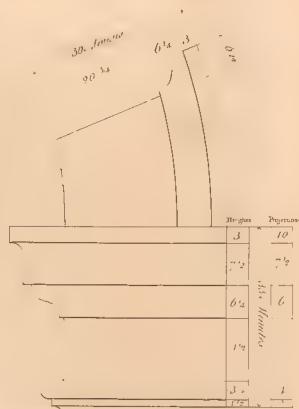
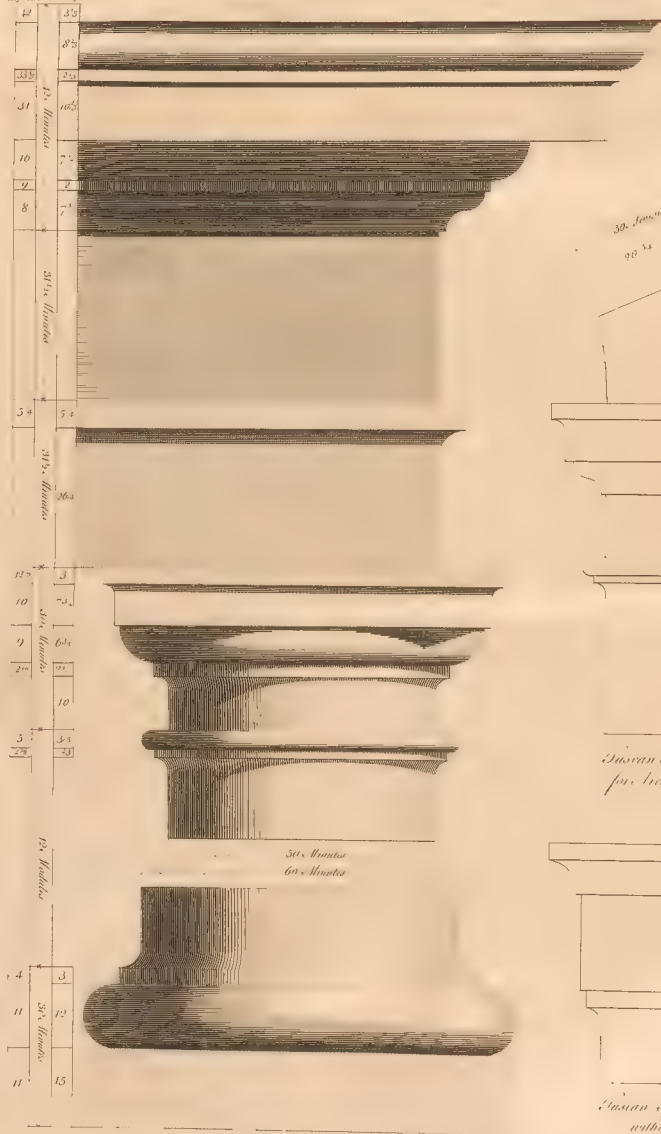
My intention being to give an exact idea of the Orders of the Antients, I have represented them under such figures and proportions as appear to have been most in use in the esteemed works of the Romans; who, in the opinion of Leo. Bap. Alberti, and other eminent writers, carried Architecture to its perfection. It must not however be imagined that the same general proportions will on all occasions succeed. They are chiefly collected from the Temples and Publick Structures of Antiquity, and may by us be employed in Churches, Palaces, and other Buildings of Magnificence, where Majesty, and Grandeur of manner may be extended to their utmost limits, and where, the whole body being generally large, the parts require an extraordinary degree of boldness, to make them distinctly perceptible from the proper point of view; but in less considerable edifices, and under various circumstances of which I shall hereafter give an accurate detail, more elegant proportions will be preferable.

\* Fig. 4. Pl. of Mouldings.

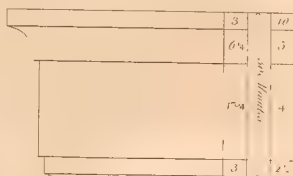




THE  
JESUIT COLLEGE



*Quercus, Armiroli and Impost;*  
*for, Ichneumon with Pedicels*



Indian Import for Archib.  
without Edwards.



*Of the Tuscan Order.*

**T**HERE are no remains of a regular Tuscan Order among the Antiques: the doctrine of Vitruvius concerning it is obscure; and the Profiles of Palladio, Scamozzi, Serlio, de l'Orme, and Vignola are all imperfect.

OF the two given us by Palladio, that taken from Vitruvius is too rustic, the other too rich, and ill composed; that of Scamozzi is yet richer, and too like the Doric; Serlio's is too plain; and Vignola's, though superiour to the other, is faulty in the Cornice, which is clumsy, with regard to the rest of the Order, ill proportioned in its parts, and ill profiled.

IN the Design here annexed I have chiefly imitated Vignola's, who in this Order hath been almost universally followed; even Inigo Jones, who was so close an adherer to Palladio, having employed Vignola's Profile in York Stairs, and others of his Buildings: but as the Cornice appears to me far inferior to the rest of the Composition, I have not scrupled to reject it, and in its place substitute that of Scamozzi, with such alterations as were evidently necessary to render it perfect. The Height of the Column is fourteen Modules, or seven Diameters, and that of the whole Entablature three and a half Modules: which being divided into ten equal parts, three of them are for the Height of the Architrave, three for the Frize, and the remaining four for the Cornice, the Capital is in Height one Module; the Base, including the lower Cincture of the Shaft, is also one Module. And the Shaft, with its upper Cincture and Astragal, twelve Modules.

THESE are the general measures of the Order. As to the particular Dimensions of the minuter parts, they may be collected from the Design, where the Heights and Projections are accurately marked; the latter being counted from perpendiculars raised at the extremities of the inferior and superior Diameters of the Shaft: a method preferable to that of de Chambray and Desgodetz, who count from the Axis of the Column; because the relations between the eights and Projections are more perceptible, and whenever a Cornice or Entablature is to be executed without a Column, which very frequently happens, it requires no additional labour, as the trouble of deducting from each Dimensions the Semi-Diameter of the Column is saved.

SCAMOZZI, that his Bases might be of the same Height in all the Orders, has given the Tuscan one, exclusive of the Cincture, half a Diameter. I have rather chosen to imitate Vignola and Palladio, who in this have deviated from the general rule: for as the Base of the Tuscan Order is composed of two Members only, instead of six, which constitute the other Bases, it becomes much too clumsy when the same general Proportion is observed.

THE Tuscan Order admits of no Ornaments of any kind: on the contrary it is sometimes customary to represent, on the Shaft of its Column, rustic Cinctures; as at the Pitti of Florence, the Luxembourg at Paris, York-Stairs in London, and many other Buildings of note. This practice, however, though frequent, and to be found in the works of several celebrated Architects, is seldom excusable, as it hides the natural figure of the Column, alters its



proportions, and destroys the simplicity of the whole composition. There are few examples of these Bandages in the remains of Antiquity; and, in general, it will be advisable to avoid them in all large compositions; reserving the rustic work for the intercolumniations, where it may be employed with great propriety, to produce an opposition, which will render the aspect of the whole distinct and striking. But in smaller works, whose parts are few, and therefore easily comprehended, they may be sometimes tolerated. Le Clerc thinks, they are proper for gates of Citadels and Prisons, whose entrance should be dreadful; and they are likewise fit for gates of Gardens or Parks, Grottos, Fountains, and Baths, where elegance of form, and neatness of workmanship, would be out of character. De l'Orme, who was exceeding fond of these Cinctures, hath employed them in several parts of the Thuilleries, covered with Arms, Cyphers, and other enrichments. This is quite absurd; for they can never be considered in any other light, than as parts which, to avoid expence and trouble, were left unfinished. We likewise find, in different parts of the Louvre, vermiculated rustics of which the tracks represent flower de lucas, and other regular figures: a practice more unnatural than the former; though Monsieur Daviler gravely tells us that it should always be done with propriety, and express a relation to the owner of the Structure; that is, the figures should represent his Arms, Crest, Mottos, Cyphers, &c.

I have in the plate of Pediments given several Designs of rusticated Columns, which are collected from buildings of note in different parts: and for the manner of executing them, as it cannot well be described, I refer to the Doric entrance of the King's stable at Charing-Cross, the gate of Burlington-House in Piccadilly, and that of Queensbury-House in Burlington-garden: in all which places the different sorts of rustic work are managed with judgement, and command of the chizel.

MONSIEUR de Chambray, in the Introduction to his Parallel, treats the Tuscan Order with great contempt, and banishes it to the Country, as unworthy of a place either in Temples or Palaces: but in the latter part of his work he is more indulgent, and takes the Column again into favour, comparing it to a Queen seated on her throne, and distributing honours to her minions.

I shall not here dispute the justness of Mr. de Chambray's remarks; but I will venture to affirm that not only the Tuscan Column, but the whole Order, as represented in the annexed Design, (which being in fact the production of Vignola and Scamozzi, I may praise without the imputation of vanity), is extremely beautiful, and for its purposes inferior to none of the rest.

THE Tuscan Order, carrying with it an idea of strength and rustic simplicity, is very proper for rural uses, and may be employed in Farm houses, Stables, Maneges, and Dog-Kennels, Green-houses, Grottos, Fountains, gates of Parks and Gardens, and, in general, in all places where magnificence is not required, and expence is to be avoided. Serlio recommends the use of it in Prisons, Arsenals, Treasuries, Sea-ports, and gates of fortified places; and Le Clerc observes, that though the Tuscan Order, as treated by Vitruvius, Palladio, and some others, ought to be entirely rejected, yet according to the composition of Vignola, there is a beauty in its simplicity, which recommends it to esteem, and entitles it to a place both in private and public buildings, even in Royal Palaces, to adorn the lower Apartments, Offices, Stables, and other places that require







require strength and simplicity, where richer and more delicate Orders would be improper.

In conformity to the doctrine of Vitruvius, and to the almost general practice of all the moderns, I have given to the Height of the Tuscan Column seven Diameters, or fourteen Modules; a proportion which is very proper for rural or military works, where an appearance of extraordinary solidity is required: but in Town buildings, intended for civil purposes, or in interior decorations, the Height of the Column may be fourteen and a half, or even fifteen Modules, as Scamozzi makes it; which augmentation may be made in the Shaft, without changing any measures either in the Base or Capital: nor need the Entablature be altered; for, as it is composed of few parts, it will be sufficiently bold, though its Height be a little less than one quarter of the Height of the Column.

*Of the Doric Order.*

**D**E Chambray, in his Parallel, gives three Profiles of the Doric Order; one taken from the Theatre of Marcellus, and the others copied by Pietro Ligorio from various fragments of Antiquity, in and near Rome. Vignola's second Doric Profile bears a near resemblance to the most beautiful of these, and was not improbably collected from the same Antique which Ligorio copied: though it must be owned that Vignola hath, in his composition, far exceeded the original; having omitted the many trivial and insignificant mouldings, with which that is overloaded, and in many respects, amended both its form and proportions.

As this Profile of Vignola's is composed in a greater style, and in a manner more characteristic of the Order, than any other, I have made choice of it for my model; having, in the general form and proportions, adhered strictly to the original; though in particular members I have not scrupled to vary, when observation taught me they might be improved.

VIGNOLA, as appears by the preface to his Orders, imagined that the graceful and pleasing aspect of Architectonic objects, was occasioned by the harmony and simplicity of the relations between their parts; and, in composing his Profiles, he constantly adjusted his measures by these simple affinities, supposing the deviations from them, in his antique originals, to proceed rather from the inaccurate execution of the workmen, than from any premeditated design in the contriver. To this notion may be ascribed many little defects, in the proportions of his mouldings, and minuter members; which, though trifling in themselves, yet, from the smallness of the parts where they happen to be, are of consequence, and easily perceivable by a judicious eye. These I have therefore endeavoured to correct, not only in this, but in others of his Orders; which, from their conformity to the best Antiques, I have in the course of this work chosen to imitate.

It has been already observed, that the real relations, subsisting between dissimilar figures, have no connection with the apparent ones; and it is a truth too evident to require demonstration. No one will deny, for instance, that the Ovolo, in the annexed Doric Cornice \*, viewed in its proper elevation, will appear much larger than the Ca-

\* Pl. Doric Order.

pital of the Triglyph under it; though, in reality, they are nearly of the same dimensions: and, if the same Ovolo were placed as much below the level of the spectator's eye, as it is above it in the present case, it is likewise clear that it would appear considerably less than any flat member of the same size. These things being so, a strict attachment to harmonic relations seems to me unreasonable; since what is really in perfect harmony, may in appearance produce the most jarring discord.

PERFECT proportion in Architecture, if considered only with regard to the relations between the different objects in a composition, and as far as it relates merely to the pleasure of the sight, seems to consist in this, that those parts, which are either principal or essential, should be so contrived as to catch the eye successively, from the most considerable to the least, according to their degrees of importance in the composition, and impress their images on the mind before it is affected by any of the subservient members; yet that these should be so conditioned, as not to be intirely absorbed by the former, but capable of raising distinct ideas likewise, and such as may be adequate to the purposes for which these parts are designed. The different figures and situations of the parts may, in some degree, contribute toward this effect: for simple forms will operate more speedily than those that are complicated, and such as project will be sooner perceived than those that are more retired. But dimension seems to be the predominant quality; or that which acts most powerfully on the sense: and this, as far as I know, can only be discovered by experience; at least to any degree of accuracy. When therefore any number of parts, arranged in a particular manner, and under particular proportions, excite, in the generality of judicious spectators, a pleasing sensation, it will be prudent on every occasion, where the same circumstances subsist, to observe exactly the same proportions; notwithstanding they may in themselves appear irregular and unconnected.

In composing the Orders and other Decorations, which are now offered to the public, I have constantly followed this method; having for that purpose measured, with the utmost accuracy, many antique and modern buildings, both at Rome, and in other parts; strictly copying such things as appeared to be perfect, and carefully correcting others, that seemed, in any degree, faulty: relying, not so much on my own judgment, in doubtful points, as on the opinion of several learned and ingenious artists, of different nations, with whom I had the advantage of being intimately connected when abroad.

I AM sensible that the extraordinary degree of accuracy, which hath been aimed at in these compositions, is of little consequence to the generality of spectators. Nevertheless, as in Poetry, Music, Painting, and indeed in all the Arts, there are many delicacies, which, though they escape the vulgar, afford uncommon satisfaction to persons of more enlightened conceptions; so, in Architecture, this kind of perfection is the source of a secondary pleasure, which may be compared to that excited by the graces of language in Poetry, by the swell, inflection, and other artifices of the voice in Music, and in Painting, by the taste of design, and the spirited, artful, touches of a masterly pencil.

IT may perhaps be objected that the proportions here established, though good on one occasion, may on others be faulty. But this objection will be groundless, with regard to Capitals and Entablatures: their situation, with respect to the Order to which they

they belong, is constantly the same; and the point of view being more or less distant, according to the size or elevation of the order, the apparent magnitudes of their parts will constantly bear, nearly, the same proportion to each other; even though they should be exalted to a second or third story. With regard to Bases, indeed, their being placed on pedestals, or immediately on the ground, will occasion some difference in their appearance; and, when they are raised to a second story, their figure and apparent proportions will be considerably altered. Nevertheless, it doth not seem necessary to vary their dimensions in either of these cases: for in the former of the two the alteration would be trifling; and, in the latter, the object is so far removed from the eye, that the spectator is rather occupied in considering the general mass, than in examining it's particular parts, which, on account of their distance, are not distinctly perceptible.

THE Height of the Doric Column, including it's Capital and Base, is sixteen Modules, and the Height of the Entablature four Modules; the latter of which being divided into eight parts, two of them are for the Architrave, three for the Frize, and three for the Cornice.

In most of the Antiques, the Doric Column is executed without a Base: Vitruvius likewise makes it without one; the Base, according to that Author, having been first employed in the Ionic Order, to imitate the Sandal, or covering of a woman's foot. Scamozzi blames this practice; and most of the Moderns have been of his opinion; the greatest part of them having employed the Attic Base in this Order. Monsieur de Chambray, however, whose blind attachment to the Antique is, on many occasions, too evident, argues vehemently against this practice; which, as the Order is formed upon the model of a strong man, who is constantly represented bare-footed, is, according to him, very improper; and though the custom of employing a Base, in contempt of all ancient authority, hath, by some unaccountable and false notion of beauty, prevailed, he doubts not but the purer eye, when apprized of this error, will easily be undeceived; and as what is merely plausibly will, when examined, appear to be false, so apparent beauties, when not founded in reason, will of course be deemed extravagant.

Le Clerc's remarks on this passage are very judicious; and, as they will serve to destroy a notion, which is too prevalent among us, I shall, for the benefit of those, who are unacquainted with the original, translate the whole passage. "In the most ancient monuments of this Order, says he, the Columns are without Bases; for which it is difficult to assign any satisfactory reason. Monsieur de Chambray, in his Parallel, is of the same opinion with Vitruvius, and maintains that the Doric Column, being composed upon the model of a naked, strong, and muscular man, resembling a Hercules, should have no Base; pretending that the Base to a Column is the same as a shoe to a man. But I must own I cannot consider a Column without a Base, in comparing it to a man, but I am at the same time struck with the idea of a person without feet rather than shoes: for which reason I am inclinable to believe, either, that the Architects of Antiquity had not yet thought of employing Bases to their Columns or that they omitted them, in order to leave the pavement clear; the Angles and Projections of Bases being stumbling blocks to passengers, and so much the more troublesome, as the Architects of those times frequently placed their Columns very near each other: so that had they been made with Bases, the passages between them would have been extremely narrow and inconvenient: and it was doubtless for the same reason that Vitruvius made the Plinth of his Tuscan Column round; that Order, according to his construction, being particularly adapted to



“ servile and commercial purposes, where conveniency is preferable to beauty. However this be, persons of good taste will grant, that a Base not only gives a graceful turn to the Column, but is likewise of real use; serving to keep it firm on its plan; and that if Columns without Bases are now set aside, it is a mark of the wisdom of our Architects, rather than an indication of their being governed by prejudice, as some adorers of Antiquity would insinuate.”

IN imitation of Palladio, and all the modern Architects except Vignola, I have made use of the Attic Base in this Order: and it is the most beautiful of any, though for variety's sake, when the Doric and Ionic Orders are employed together, the Base invented by Vignola, of which a Profile is annexed, may sometimes be used: Bernini has used it in the Colonnades of St. Peter's, and it hath been successfully applied in many other buildings.

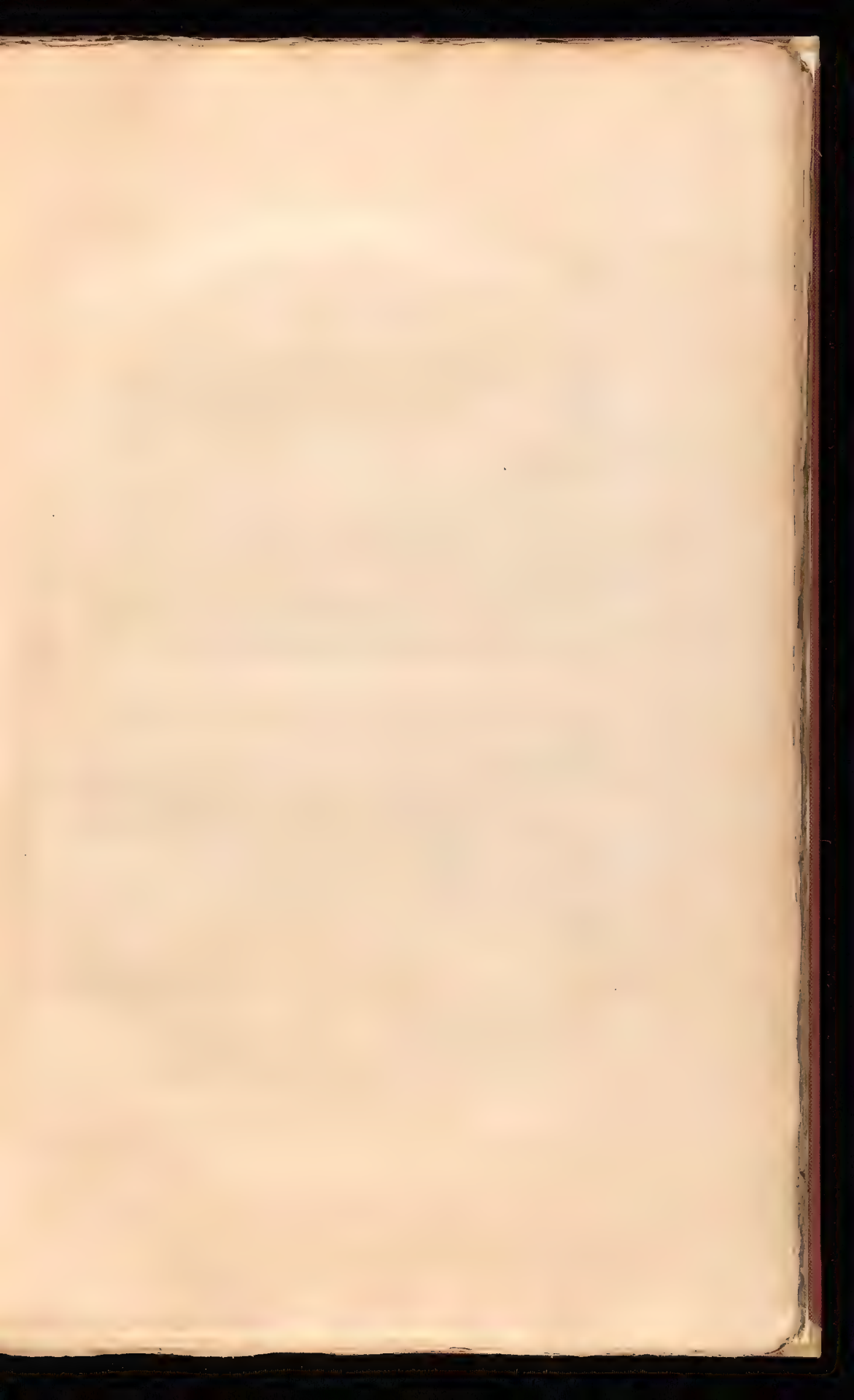
THE Antients sometimes made the Shaft of the Doric Column prismatic, as appears by a passage in the fourth book of Vitruvius; and at other times they adorned it with a particular kind of shallow Flutings, described from the center of a square, no interval or fillet being left between them; of which sort there are now some Columns to be seen at the Temples of Pesto near Naples, and in the church of St. Peter in Catenis at Rome. The former of these manners hath not, I believe, been imitated by any of the moderns: nor is the second very frequent; Scamozzi blames it for its want of solidity, the projecting angles between the Flutings being easily broken, and very subject to moulder.

VITRUVIUS gives to the Height of the Doric Capital one Module, and all the moderns, except Alberti, have followed his example. Nevertheless, as it is of the same kind with the Tuscan, they should both bear nearly the same proportion to the Heights of their respective Columns; and consequently the Doric Capital ought to be more than one Module, and accordingly it is so both at the Coliseum, and in the Theatre of Marcellus; being in the former of these buildings upwards of thirty-eight Minutes, and in the latter thirty-three Minutes.

IN the Design here offered, I have made the Height of the whole Capital thirty-two Minutes, and, in the Form and Dimensions of the particular members, have deviated but little from the Profile of the Theatre of Marcellus. The Frize, or Neck, is enriched with Husks and Roses, as in Palladio's Design, and as it has been executed by Sangallo at the Farnese, and by Cigoli in the Cortile of the Strozzi at Florence, as well as in several buildings of note in this city. The Projection of these Husks and Flowers must not exceed that of the upper Circumference of the Column.

THE Architrave is one Module in Height, and composed only of one Fascia and a Fillet, as at the Theatre of Marcellus: the Drops are conical, as they are in all the Antiques; and not pyramidal, as they are very improperly made by most of our English workmen.

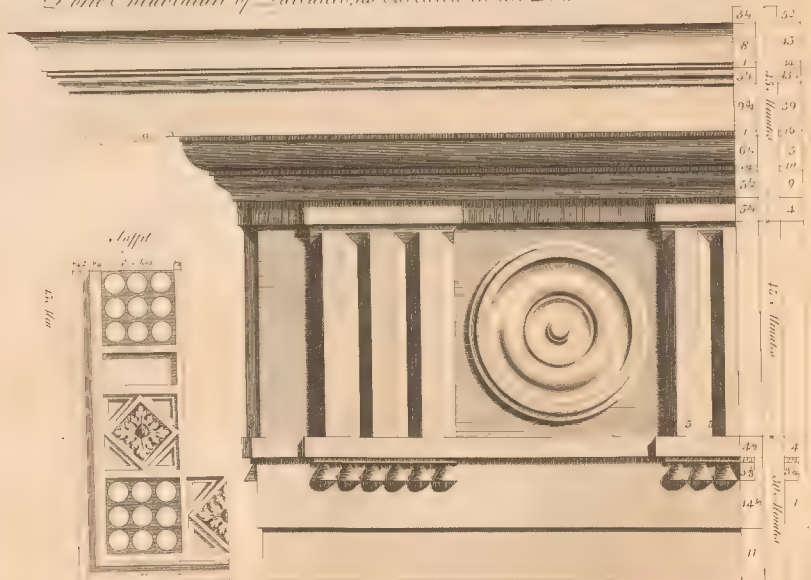
THE Frize and Cornice are each of them one Module and a half in Height: the Metope is enriched with a Bull's skull, adorned with a Garland of Beads; in imitation of those on the Temple of Jupiter Tonans, at the foot of the Capitol. In some Antique fragments, and in a great number of modern buildings, the Metopes are alternately enriched with these Ox skulls, and Pateras; but they may be filled with any other ornaments



*Ionic Entablature, Imitated from the Theatre of Marcellus.*



*L'ordre d'antiquité de Palladio, as Executed in the Basilica at Vicenza.*





ments of good forms, and frequently with greater propriety. Thus, in military structures, Heads of Medusa, or the Furies; Thunderbolts, and other symbols of Horror, may be introduced: likewise Helmets, Daggers, and Garlands of Laurel, or Oak. But Spears, Swords, Quivers, Bows, Cuirasses, Shields, and the like, must be avoided; because the real dimensions of these things are too considerable to find admittance in such small compartments; and representations in miniature always carry with them an idea of littleness. In Sacred Buildings, Cherubs, Chalice, and Garlands of Palm or Olive, may be employed: likewise Doves, or other Symbols of moral virtues; and in private houses, Crests and Badges of dignity, may sometimes be suffered, though seldom; and indeed never, when they are of such formal and insipid figures, as Stars and Garters, Crowns, Coronets, Mitres, Truncheons, and the like; the bad effects of which may be seen at the Treasury in St. James's Park.

Too much Variety in the Ornaments of the Metopes must be avoided, for fear of destroying the unity of the composition: and it is best never to introduce more than two different representations, which should not consist of above one, or at most two objects, each, of simple forms; and not overcharged with Ornaments. In the disposition of these care must be taken to place them with Symmetry; those on the right corresponding with those on the left: wherefore, when a Triglyph happens to be in the middle of a Front, it becomes necessary to couple the middle ones, by filling the two Metopes, on each side of the central Triglyph, with the same sort of Ornaments; (as at the gate of Burlington-House,) disposing the rest alternately throughout the whole Front, as usual. It is likewise to be observed, that the Ornaments of the Metopes are not to project so much as at Bow-Church, and at General Wade's House in Burlington-Garden; where they are far more striking than the Triglyphs, which ought to be predominant; being Essential and Principal parts in the composition. Palladio, in the Basilica of Vicenza, has given to the most elevated parts of the Ox-Heads and Pateras very little more projection than that of the Triglyph, and in this he has copied the Antients, who seldom or never gave more projection to any Ornament than that of the border in which it was enclosed; as appears by those inimitable fragments in the Villa Medici, and many others in different parts of Rome. The Channels of the Triglyph in their Plan commonly form a right angle; but, to give them more effect, a narrow channel may be cut in the inner angle from top to bottom, and quite to the solid of the Frize.

In the Cornice I have deviated very little from my Original. Le Clerc, who, in his Doric Profile, has imitated that of Vignola, makes the Mutules as broad as the Capital of the Triglyph. Mr. Gibbs hath followed his example; and they have been executed in this manner at a couple of doors to houses on the North-Side of Lincoln's Inn Fields. But Vignola's method is preferable, who makes them only as broad as the Triglyph. The ornaments of the Soffit are nearly the same as those of Vignola: they should be entirely wrought in the solid of the Corona, and have no projection beyond it. There is no necessity for cutting them deep. In most of Palladio's buildings, they do not enter above two minutes, and that is sufficient.

VIGNOLA's other Doric Profile is an imitation of that of the Theatre of Marcellus; and in it he has very judiciously pointed out, and, in some measure, corrected the faults of the original: but his reverence for the Antique has made him rather too sparing in his amendments. I have given a design of this Profile\*, with such farther corrections as

\* Pl. Doric Entablatures.

appeared necessary; the most considerable of them consisting in the enlargement of the Dentils, which, both in the Antique and in Vignola's Profile, are too small.

AT the Theatre of Marcellus, the Ornaments of the Soffit are not in a horizontal position, but hang down towards the Front of the Corona; which, as it appears by Vitruvius, was a common practice amongst the Antients, and done to imitate the inclination of the Rafter. Palladio and Vignola have both adopted this particularly; which Davilere supposes to have been first used in order to make the projection of the Entablature appear more considerable. It has an exceeding disagreeable look: the whole Soffit seems to be falling; and so far is it from producing the effect which Monsieur Davilere supposes, that it actually makes the projection seem less than it really is.

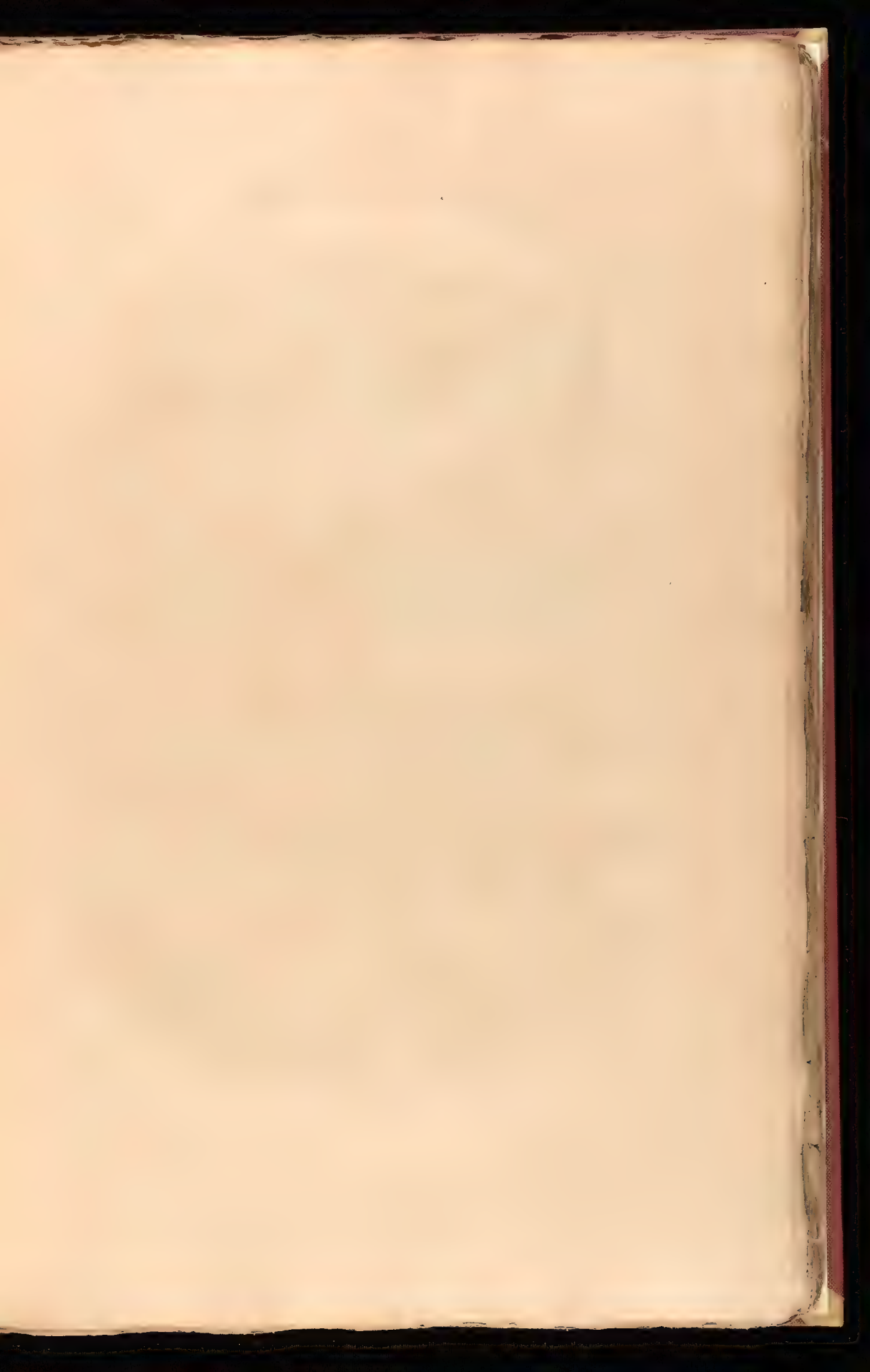
VIGNOLA's two Doric Entablatures, says Davilere, are both of them so elegantly composed, that it is scarce possible to determine which ought to have the preference. The first of his Profiles, which is entirely Antique, is the lightest, and consequently the properest for interior decorations, that are to be viewed near; the other, on the contrary, which was composed by Vignola, being bolder, seems intended for outside works, and places where the point of view is not limited. In polygonal plans the Mutule Cornice must be avoided; because the Soffits of the angular Mutules will form irregular and very disagreeable figures: neither should it be employed in Concaves, of small dimensions, for the same reason; nor in places where frequent breaks are requisite, because it is extremely difficult, often impossible, to prevent the Mutules from penetrating each other. When the Mutule Cornice is used on a convex surface, the sides of the Mutules must be parallel. For it would be disagreeable to see them broader in front than they are at the place where they spring out of the Mutule Band.

PALLADIO's Doric Entablature is likewise very beautiful: I mean as it is executed in the Basilica at Vienna, which is widely different from the Profile in his book \*. In the same plate with Vignola's Dentil Entablature, there is a Design of it accurately copied; which may serve as one instance of many, to shew how little the measures of his book are to be relied upon.

OF all the Orders the Doric is most difficult to distribute, on account of the large Intervals between the Triglyphs. At the Coliseum they are omitted; and so they are in the Colonnades of St. Peter's, and in several other buildings at Rome. This indeed obviates the difficulty; but it likewise deprives the Order of one of its principal Ornaments, without which it is very little preferable to the Tuscan.

THE Antients employed the Doric in Temples dedicated to Minerva, to Mars, and to Hercules; whose grave and manly dispositions suited well with the character of this Order. Serlio says it is proper for Churches dedicated to Jesus Christ, St. Paul, St. Peter, or any other Saints remarkable for their fortitude, in exposing their lives for the Christian faith. Le Clerc recommends the use of it in all kinds of Military Structures; as Arsenals, Gates of fortified places, Guard-houses, &c. and it may likewise be employed in the Houses of Generals, or other Martial men, in Mausoleums erected to their memory, or in Triumphal Bridges and Arches built to celebrate their victories.

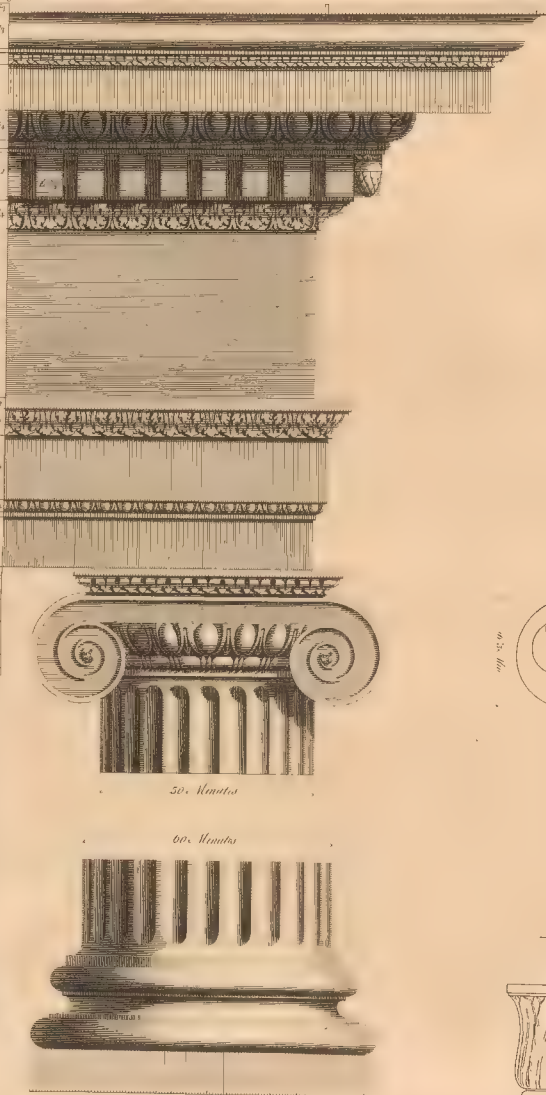
\* Pl. Doric Entablatures;





Doric Column Height

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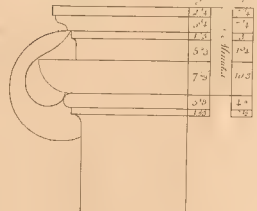


*J. H. & J. W. & J. C.*  
*C. R. & L. R.*

*Side of the Capital*



*Profile of the Capital*



*Plan of the Capital*



*Architectural Order*



*Architectural Order*

I HAVE made the Height of the Doric Column sixteen Modules; which, in buildings where Majesty is required, is a good proportion: but in others it may be slenderer. Thus Vitruvius makes the Doric Column in Porticos higher by half a Diameter than in Temples; and most of the modern Architects have on some occasions followed his example. In private houses therefore it may be  $16\frac{1}{2}$ ,  $16\frac{2}{3}$ , or  $16\frac{1}{3}$  Modules high; and in interior decorations even seventeen Modules, and sometimes a trifle more; which encrease in the Height may be made entirely on the Shaft, as in the Tuscan Order, without changing either the Base or Capital. The Entablature may remain unaltered: for it will be sufficiently high.

*Of the Ionic Order.*

**A**MONG the Antients, the form of the Ionic Profile appears to have been more positively determined, than that of any other Order; for in all the Antiques at Rome (the Temple of Concord excepted) it is exactly the same, and agreeable to the description Vitruvius hath given of it.

THE modern Artists have likewise been unanimous in their opinion; all of them, excepting Palladio and his imitators, having employed the Dentil, Cornice, and the other parts of the Profile, nearly as they are found in the Coliseum, the Temple of Fortune, and the Theatre of Marcellus.

IN Palladio's works we meet with three different Ionic Entablatures, all of them very beautiful. The first is the true Antique, which he has made use of at the Palace of the Porti in Vicenza, and in several doors and windows of the Thieni, and Valmarano. The second is a very judicious imitation of the Entablature in the Temple of Concord, and executed in the second story of the Basilica at Vicenza. And the third, which is an invention of his own, being the same with that in his book, he hath employed with some little difference at the Chiericato, at the Rotonda of Marchesi Capra, and in several others of his buildings.

IN the first Plate of the Ionic Order there is a Design of the Antique Profile, collected from different Antiquities at Rome. The Height of the Column is eighteen Modules, and that of the Entablature four Modules and a half, or one quarter of the Height of the Column, as in the other Orders; which is a trifle less than in any of the regular Antique Ionics. The Base is Attic, as in all the Antiques, and the Shaft of the Column may be plain, or fluted with twenty four Flutings, or twenty only, as at the Temple of Fortune; whose Plan may be a trifle more than a semi-circle, as at the Temple of Jupiter Tonans, and the Forum of Nerva, because they then appear more distinct; and the Fillet, or Interval between them, must not be broader than one third of the breadth of a Fluting, nor narrower than one quarter thereof. The Ornaments of the Capital are to correspond with the Flutings of the Shaft; and there must be an Ove above the middle of each Fluting. The Volute are to be traced according to Goldman's method, which is the best. I have given a Design of it, with an exact description upon the Plate. Perrault prefers de l'Orme's method of describing it; yet certainly it is not so perfect. For in the latter, the circular portions that compose the Volute have their radii, at their junction, in one straight line; so that they meet without forming an angle: whereas in that of de l'Orme, the radii

N

never

never coincide; and consequently no two of the curves can joyn without forming an angle. The space, in de l'Orme's Volute, between the first quadrants, in the first and second revolution, is of the same breadth throughout; both the quadrants being described from the same center: in Goldman's the space between the revolutions diminishes regularly from the very first. Moreover, de l'Orme hath given no directions for describing the inner Spiral, which is to determine the breadth of the Fillet; and which in his Design is nearly of the same breadth from first to last; but Goldman hath taught the manner of describing it, so as to diminish gradually, with the same accuracy as the outward Spiral. Palladio's Volute differs but little from that of de l'Orme, and hath therefore nearly the same defects: and though Mr. Gibbs hath, in some measure, mended it, yet his likewise is faulty in the breadth of the Fillet, which is equal through the greatest part of the first revolution.

VIGNOLA and Scamozzi have, in their Architraves, imitated those of the Theatre of Marcellus, and of the Coliseum; having composed them of three Fascias, which are only distinguished from each other by a small projection. This hath a bad effect; and Palladio's and de l'Orme's Architraves appear to me too rich, being composed of three Fascias, and a good number of Mouldings: so that I have chosen rather to follow the Profile of the Temple of Antoninus and Faustina in this particular.

THE three parts of the Entablature bear the same proportion to each other, in this as in the Tuscan Order. The Frize is plain, as being most suitable to the simplicity of the rest; and the Cornice is almost an exact copy from Vignola's Design, in which there is a grandeur of stile, that none of his competitors have arrived at.

If it be required to reduce this Entablature to two ninths of the Height of the Column, (which, on most occasions, is a proportion preferable to that of one quarter; particularly to eyes habituated to trivial objects), it may easily be done, by making the Module for the Entablature less by one ninth than the semi-diameter of the Column, dividing it as usual, and observing the same dimensions that are figured in the Design. The distribution of the Dentil-Band will answer pretty nearly in all the regular Intercolumniations; and in the outer Angle there will be a Dentil, as in the Temple of Fortune.

In interior decorations, where much delicacy is required, the Height of the Entablature may be reduced even to one fifth of the Column, by observing the same method, and making the Module only four fifths of the semi-diameter.

OF Palladio's Profiles, that imitated from the Temple of Concord appears to me the best: it's Height is equal to one fifth of the Height of the Column. The Design, which I have given of it, is closely copied from the Basilica at Vicenza: but it will be more perfect if the Frize be made flat, and it's Height augmented so as to equal that of the Architrave; by which means the proportion of the Entablature to the Column will be better; for the relation of one to five is, generally speaking, too small. In the Cornice it will likewise be well to add, between the Corona and Fillet an Oge, of the same size with that over the Modillions, that all the parts may be equally rich, as Scamozzi has done; whose Ionic Entablature may be considered as a copy from this composition of Palladio. The Fillet may, in that case, be diminished a trifle. Palladio's other Profile I have copied from the Rotonda of Capra: it's Height is likewise one fifth of the Column. The Frize, as in the former Design, is low and swelled: but it will be better to raise it to the same Height with



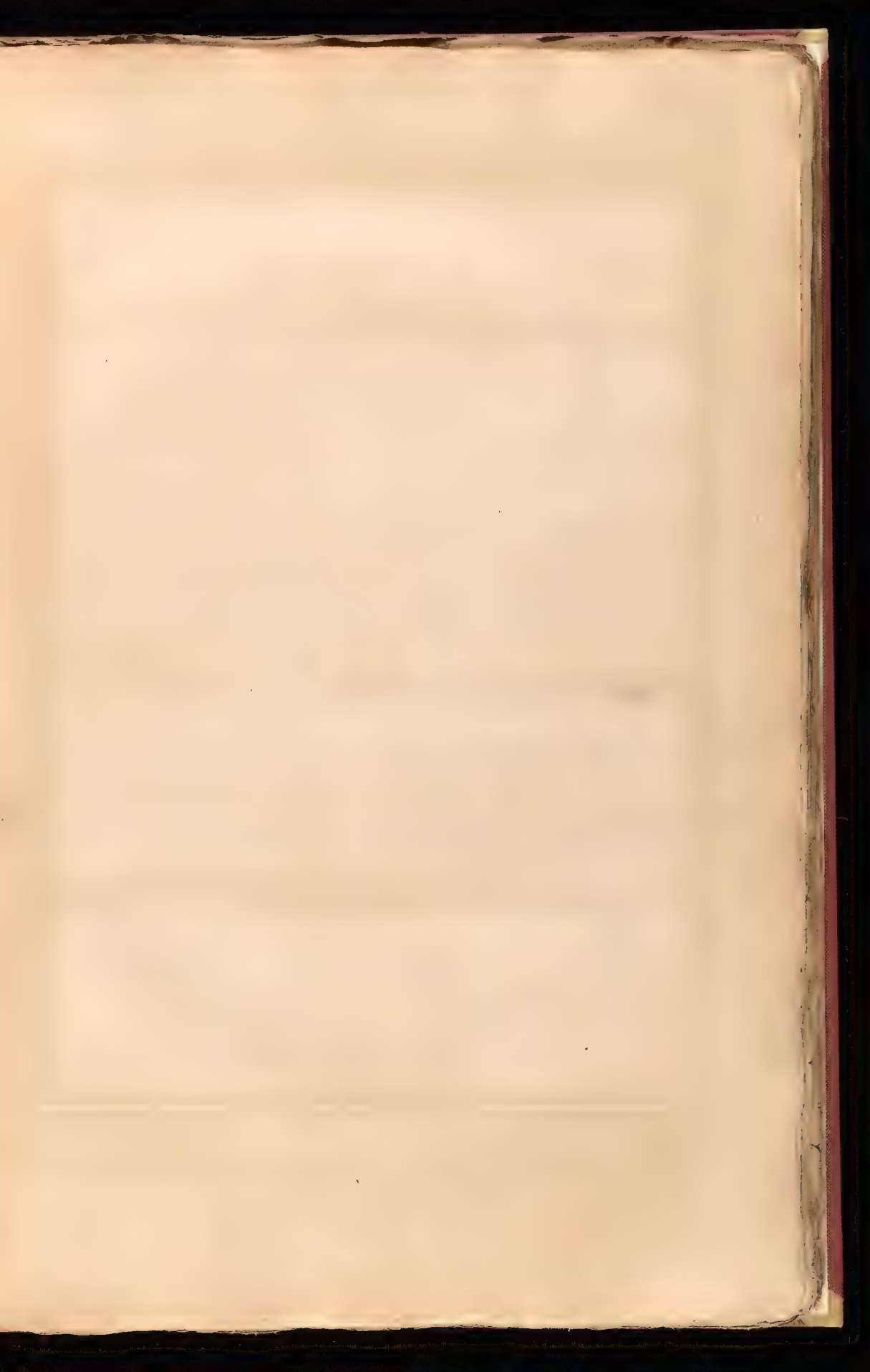


## Goldman's Volute Described:

Fig. 1. Draw the Cathetus  $FC$  whose length must be half a  $\bullet$  Module, and from the point  $C$  describe the Eye of the Volute  $AEBD$ , of which the Circumference will be 33 minutes, divide it into four equal parts by the Diameters  $AB, DE$ .—Produce the Radii  $CA, CB$  in 1 and 4, and on the line 1. 4 Construct a Square 1.2.3.4, from the Centre  $C$  to the Angles 2.3 draw 4 Diagonals  $C, 2, C, 3$ , and divide the side of the Square 1.4 into Six equal parts at 5, 9, 12, 8, then through the points 5, 9, 12, 8 draw the lines 5, 6, 9, 10, 12, 11, 8, 7 parallel to the Diameter  $ED$  which will cut the Diagonals in 6, 7, 10, 11, and 6, write 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12 will be the Centres of the Volute, from the first Centre 1 with the Interval 1.6 describe 1/4 Quadrant  $FG$ , from the second Centre 2 with the Interval 2.6 describe the Quadrant  $GH$ , and continuing the same operation from all the twelve Centres, the Contour of the Volute will be Completed.

Fig. 2. The Centres for describing the fillet are found in this manner, Construct a Triangle of which 1/4 side  $AF$  is equal to the part of the Cathetus contained between  $AE$  and the side  $FE$  equal to  $C, 1$ , on the side  $AF$  place 1/4 distance  $FS$  from  $F$  towards  $A$ , equal to  $FS$  the breadth of the fillet, and through the point  $S$  draw the line  $ST$ , which will be to  $C, 1$  in the same proportion as  $AS$  is to  $AF$ , place this line on each side of the Centre  $C$  on the Diameter of the Eye  $AB$ , divide it into three equal parts, and through the points of division draw lines parallel to the Diameter  $ED$ , which will cut the Diagonals  $C, 2, C, 3$ , and you will have twelve new Centres, from whence the interior Centres of 1/4 fillet may be described, in the same manner as the exterior ones were from the first Centres.









with the Architrave, and keep it flat as before directed; for the swelling gives it a clumsy appearance, and renders the outline of the whole Entablature confused, and too abundant in curves. In the Antiques there are few examples of these swelled Frizes; and they never succeed, but on doors or windows, where the Profile of the Architrave is not seen: there they form a good contrast with the upright jambs; and have the farther advantage of contracting the breadth of the Cornice, (which in narrow intercolumniations is very convenient), and avoids the licentious practice of making the Frize and Cornice no broader than the aperture, supporting it on each side with a Scroll, as at the Sorbonne in Paris, and at the Mansion-House in this City. Palladio, in both these Profiles, has enriched the Soffit of the Corona with Roses; which are here omitted, as in most cases they should be. However, if the Column is fluted, and the rest of the Composition much adorned, they may be employed; observing to proportion the Pannels and other parts, as in the Corinthian or Composite Order.

THE Antique Ionic Capital differs from any of the others. Its Fronts and Sides are not alike. This particularity occasions a very great difficulty, where ever there are any Breaks, or where the decoration is continued in Flank as well as in Front: for either all the Capitals in the Flank must have the Baluster-side outwards, or the angular Capitals will have a different appearance from the rest; neither of which is eligible. The Architect of the Temple of Fortune has fallen upon an expedient, that, in some degree, remedies the defect: the angular Capitals have the outward Volute in an oblique position, inclining equally to the Front and Side, and fronting both ways. Where persons are violently attached to the Antique, and bent on rejecting all Modern inventions, however excellent, this is the only method that I know of: but when that is not the case, the angular Capital invented by Scamozzi, or rather imitated by him from the Temple of Concord, ought to be employed; for the distorted figure of the Antique Capital, with one Volute parallel and the other oblique, is very disagreeable to the sight.

ANNEXED is a Design of Scamozzi's Capital, and another of a very beautiful one executed in St. Peter's of the Vatican, at the Church of the Roman College, and at some other places in Rome.

I HAVE employed the Attic Base in this Order. Of the Antique Base described by Vitruvius, and used by Vignola and Philibert de l'Orme, in their Ionic Order, there is no example in the Antiques; and as it is universally esteemed a very imperfect production, I have not given any Design of it.

As the Doric Order is particularly affected in buildings dedicated to male Saints, so the Ionic is used in such as are erected to female Saints of the Matronal state. It is likewise employed in Halls of Justice, in Libraries, Colleges, and other Structures that have any relation to Arts or Letters, in private Houses and in Palaces, to adorn the Women's Apartments, and, says le Clerc, in all places consecrated to peace and tranquillity. The Antients used it in Temples dedicated to Juno, to Bacchus, to Diana, and other Deities whose dispositions held a medium between the severe and effeminate.

*Of the Composite Order.*

**S**TRICTLY speaking, the Antients had but four Orders: the Composite was not considered by them as a distinct production: Vitruvius expressly tells us, Book iv. Chap. 1., that on Corinthian Columns other Capitals of various kinds were employed; which nevertheless ought not to change the names of the Columns, because their proportions remained still the same.

THE Moderns, however, have ranked the Composite with the four Orders mentioned by Vitruvius; having, among the great number of Capitals to be met with in the remains of Antiquity, chosen for a Model that which hath been used in the Triumphal Arches, in the Temple of Bacchus, and the Baths of Dioclesian; rather, I believe, as agreeing more with the description of Vitruvius, (who observes that they were composed of the Ionic, Doric, and Corinthian,) than from any preference in point of beauty to many others.

It doth not appear that the Antients affected any particular form of Entablature to this Capital. Sometimes the Cornice is entirely plain, as in the Temple of Bacchus; at others, as in the Arch of Septimius Severus, it is enriched with Dentils differing very little from the Ionic: and in the Arch of Titus there are both Dentils and Modillions; the whole form of the Profile being the same with the Corinthian, as executed in the Antiques at Rome.

THE Modern Architects have varied more in this than in any other Order; abandoned, as de Chambray observes, by their guide Vitruvius, and left entirely at large, they have all taken different paths, each following the bent of his own particular fancy. Among them Serlio has been least successful; having chosen, for the Model of his Entablature, that of the fourth Order of the Coliseum: a composition far too clumsy for a Tuscan Order. De l'Orme, however, has followed his example, and mistaken the Column of the fourth Order of the Coliseum, which is Corinthian, for a Composite one.

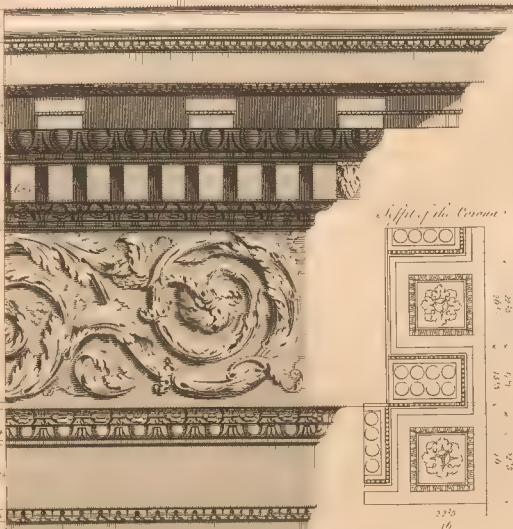
PALLADIO, in his Profile, has imitated the Cornice of the Frontispiece of Nero, and corrected its defects with much judgement. His Architrave is likewise taken from the same building: but he has omitted its beautiful Frize, and in its place substituted a swelled one, resembling that of the Basilica of Antoninus. His whole Entablature is too low; being only one fifth of the Height of the Column: and it is remarkable, that, though he has made the Column more delicate than in the Corinthian Order, yet the Entablature is far more massive, being composed of fewer and much larger parts. In the Design which I have given in the second Plate of the Composite Order, Palladio's measures are closely observed: but if the Frize be augmented, so as to raise the Entablature to two ninths of the Column, made upright, and enriched with Ornaments, it will be more perfect, and may be employed in works of large dimensions, which are to be seen at a good distance. But for interior Decorations, and in all places where Delicacy is required, it is too clumsy; Palladio's Capital and Base are imitated from the Arch of Titus. The latter of them is designed without a Plinth, as in the Temple of Vesta at Tivoli, and joined to the Cornice of the Pedestal by a slope: which not only has a bad effect, but is in itself defective; because the Base is divested of its most Essential Member.

VIGNOLA's Composite has nothing remarkable in it. The Architrave differs little from that of the Frontispiece of Nero, and the Cornice is nearly the same with his Ionic;  
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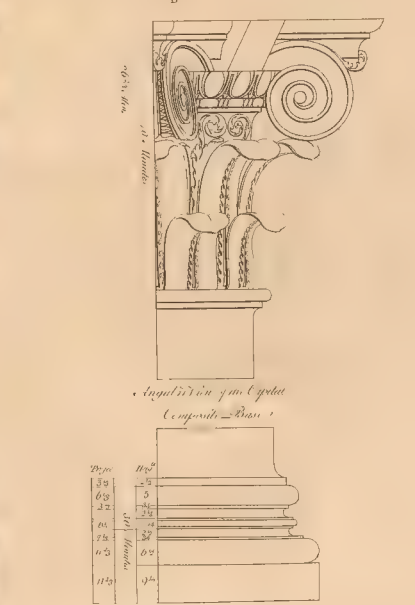
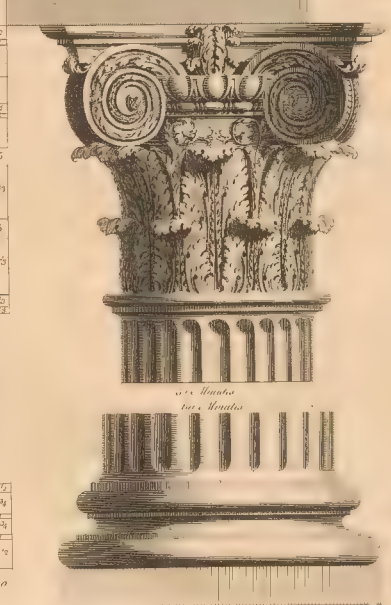
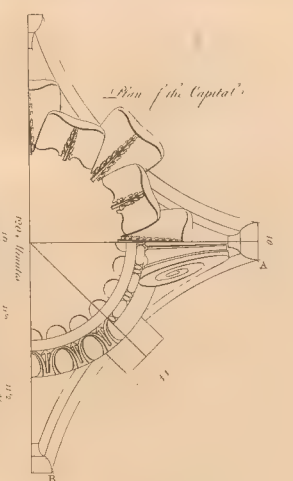


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THE ARCHITECTURE  
OF THE TEMPLE OF VESTA



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"The Architect's Scale"

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the greatest difference consisting in the transposition of some of the Mouldings, and enlarging the Dentils; both of which are alterations for the worse.

SCAMOZZI's Entablature being like Palladio's, only one fifth of the Column, and much divided, has a trifling appearance: but the Cornice is, upon the whole, well composed; being in a great measure imitated from the third Order of the Coliseum. His Capital is like that of Palladio, and his Base is Attic, enriched with Astragals; as at the Basilica of Antoninus.

THE Design which I have given, in the first Plate of the Composite Order, is an invention of my own; in which I have endeavoured to avoid the faults, and assemble the perfections, of those above mentioned. If I have succeeded, it is well: if not, recourse may be had to Palladio, Scamozzi, or Vignola, as heretofore. The Height of the Column is twenty Modules, and that of the Entablature five: the Base is Attic, and its measures the same as in the Doric and Ionic Orders; but as the Module is less, all its parts are of course more delicate. The Shaft is enriched with Flutings, which may be to the number of twenty, or twenty four, as in the Ionic Order: for there is no reason why their number should be augmented. The Module is less; the Flutings will therefore be less likewise, and correspond exactly with the character of the rest of the Composition.

THE Capital is of the same kind that all the Moderns have employed in this Order, and enriched with leaves of the Acanthus, as all the Antique Capitals of this sort are. With regard to the method of tracing it, few directions will suffice: for the Designs are all exactly figured. The Curvatures of the Abacus are described from the summits of equilateral triangles; the projection of the Volutas is determined by a line drawn from the extremity of the Astragal to the extremity of a horn of the Abacus; and the projection of the Leaves is determined by another line drawn from the Fillet below the Astragal, parallel to the former.

THE manner of executing both these, and all other enriched Capitals, in this City, is generally speaking bad. I do not, however, mean to accuse our English workmen of wanting capacity: a great number of them are excellent, and in neatness of execution out-do, perhaps, those of any other Country whatever: but, from the parsimony of their employers, and in some degree for want of perfect skill and facility in designing, their performances are often flat, without intention or effect; in short to the last degree insipid.

MANY, even of our greatest Architects, have too much neglected the detail; having employed their attention wholly on the general disposition of their Compositions. This neglect, though authorized by great examples, ought by no means to be imitated: it is the business of the Architect to attend to the minutest object, as well as to the most considerable. If the entire execution of the fabric be left to his direction, the faults that are committed will be stated to his account: and therefore it will be prudent in him to chuse good workmen, and to furnish them with proper models, and precise instructions; in which he will shew the extent of his capacity, and distinguish himself from the common herd of those who assume the title of Architects. The most masterly disposition, incorrectly executed, can only be considered as a sketch in Painting, or as an excellent piece of Music performed by Country Fiddlers.

P

THE



THE Foot of the Leaves of the Capital must not project beyond the upper part of the Shaft of the Column, as at St. Carlo in the Corso at Rome, and at the Banqueting-House in London; for nothing is uglier: neither is the lower row of them to bend forwards, as in many of the Antiques, and in some Modern Buildings, because they then hide a great part of the upper Leaves, and give a disagreeable form to the whole Capital. The different Bunches that compose the Leaves must be strongly marked, and massed in a distinct manner. The Sprigs, that spring from between the upper ones, are to be kept flat upon the Vase; and the Ornaments of the Volutes are not to project beyond the Fillets that enclose them. These are all the directions that can well be given in writing: but those who would excell in works of this kind must consult Nature, and those Buildings, Antient or Modern, in which they have been executed with care and judgement.

THE Parts of the Entablature bear the same proportion to each other, as in the Ionic and Tuscan Orders. The Architrave is nearly the same with those of Palladio, Vignola, and the Basilica of Antoninus. The Frieze is enriched with Foliages, in imitation of those at Nero's Frontispiece; whose most prominent parts ought never to project beyond the uppermost Moulding of the Architrave.

The Cornice is imitated from Scamozzi, and differs from the Corinthian only in the Modillions; which are flat. The Soffit of the Intervals between the Dentils must be hollowed upwards, behind the little Fillet in Front, as they are in most of the Antiques; which occasions a dark shade, that marks the Dentils more distinctly: and the same must be observed in the Ionic and Corinthian Orders. The Roses in the Soffit of the Corona are not to project beyond its horizontal Surface; and care must be taken not to vary them so much as at St. Peter's of the Vatican, because the Unity of the Composition suffers thereby. The Modillions or Dentils might with almost as much propriety be varied: it will be best therefore to make them all alike, as they are in most of the Antiques, and at Mr. Spencer's magnificent House in the Green Park, that so they may not strike the beholder as distinct objects, but as parts of one great whole. Or they may be of two kinds, which occasions more variety, and no confusion: for the ideas succeed each other so rapidly, that the third takes place before the first is in any degree obliterated; so that nearly the same effect is produced as by a continued succession of the same object. But though this variety be allowable in small objects, which the eye peruses at a single glance, and in such as are merely accessory, and do not influence the general form of the Composition; yet it is by no means to be tolerated in Columns, and other large or essential parts, which, from the number of their constituent points, are not conveyed to the mind at once, either with ease or perfect clearness, and therefore, if varied, cannot fail of exciting confused ideas.

THE Romans used the Composite Order more frequently in their Triumphal Arches than in any other Buildings; meaning, as Serlio supposes, to express their dominion over those Nations that invented the Orders of which this was composed. It may, says le Clerc, be used with propriety, wherever Elegance and Magnificence are to be assembled; but it is more particularly adapted for Buildings intended to commemorate any signal Event, or to celebrate the Virtues and Actions of Conquerours or Legislators: because the Capitals, and other Ornaments, may be composed of Emblems and allusive Representations; which is agreeable to the custom of the Antients; as appears by multitudes of Fragments of Capitals, and other Members of Architecture, to be seen in different parts of Rome; some of which are represented in the second Plate of the Composite Order.

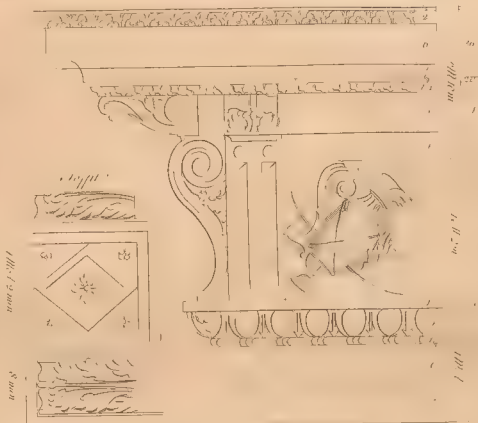
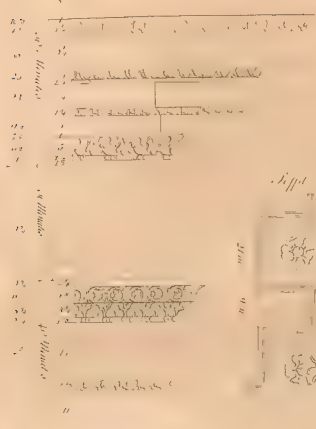
THE

*Composite Entablatures & Capitals*

*Propellans* . . . . . 1. Falla, li.

*Stella Augusti*

$\frac{d}{dt} \log \left( \frac{\partial f}{\partial x} \right) = -\frac{f}{x}$



*Flora*

*Moss*

• *Spuller*



*French Order-*



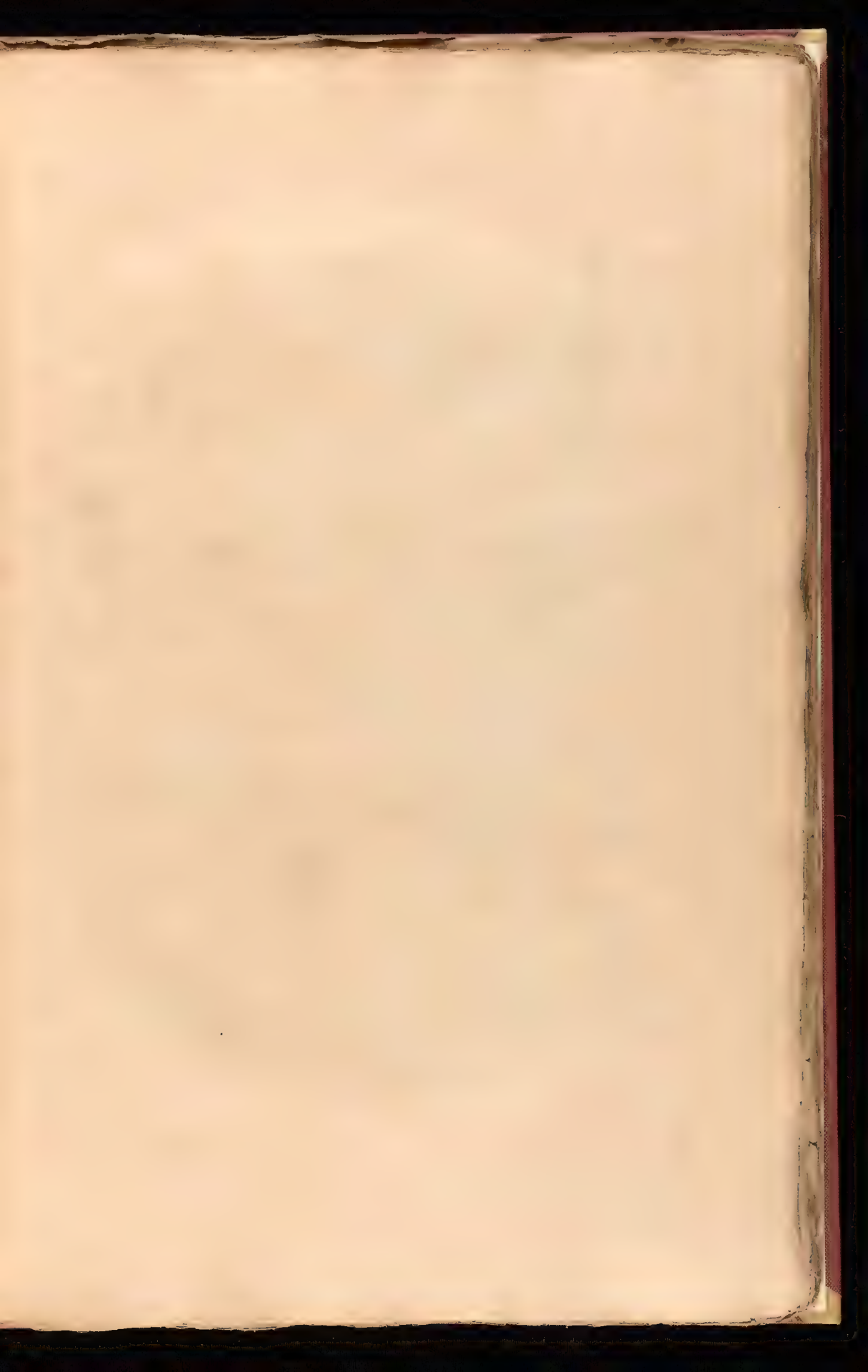
Yours



*Superior*







Figures and Order Height

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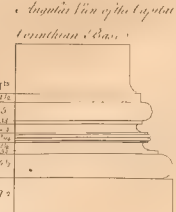
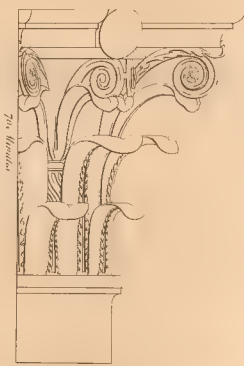
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11. Fluted Column



12. Fluted Column

# THE CORINTHIAN ORDER



|   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |     |
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13. Fluted Column

THE Composite Entablature may be reduced to two ninths of the Column, (which to avoid fractions I shall call four Modules and a half), by making the Module only nine tenths of the semi-diameter, and observing the measures as in the Design; and there will be a Denticel in the outer Angle, as in the Ionic Order. It may likewise, if required, be reduced to one fifth, by making the Module four fifths of the semi-diameter: though, in cases where it is necessary to diminish it so much, it will be best to employ the Ionic Cornice; which, being composed of fewer parts, will still retain an air of grandeur, notwithstanding the smallness of the whole mass.

MOST Authors give the last place to the Composite Order, as being the last invented, and a Compound, which of course ought to be preceded by all the Simples. I have followed Scamozzi's method; his arrangement appearing to me the most natural: for his Orders succeed each other according to their degrees of strength, and in the progression that must absolutely be observed, whenever they are employed together.

Of the Corinthian Order.

THE most perfect Model of the Corinthian Order, among the Antiques at Rome, is generally allowed, upon the whole, to be the three Columns in the Campo Vaccino; the remains, as is thought, of the Temple of Jupiter Stator. Palladio, in his fourth Book, where he gives the whole Profile at large, acknowledges that he never had seen any work better executed, or more delicately finished; that all its parts are beautifully formed, well proportioned, and artfully combined; which two last qualities I take to be signified by his *Benissimo Intesi*.

WITH these favourable sentiments it is remarkable, that, in his design of the Corinthian Order, he hath so far deviated from this excellent original, as scarcely to leave the smallest shadow of resemblance to it.

VIGNOLA, in his Corinthian Profile, has chiefly imitated the above mentioned fragment, and the interior Order of the Pantheon, another excellent Model. His Composition is extremely beautiful, and beyond dispute superiour to that of any other Master. He hath artfully collected all the perfections of his Originals, and formed a whole preferable to either of them.

THE Design which I have given differs little from that of Vignola. The Column is twenty Modules high, and the Entablature five; which proportions are a medium between those of the Pantheon and of the Three Columns. The Base of the Column may either be Attic or Corinthian: they are both beautiful. Palladio and Scamozzi have employed the Attic Base, enriched with Astragals: but so frequent a repetition of the same form hath a bad effect, as may be seen at the Church of St. Martin's in the fields, and at the Bank.

If the Entablature be enriched, the Shaft of the Column may be fluted; provided it be not composed of variegated Marble: for a diversity of colours renders even smooth surfaces confused, and Ornaments of Sculpture only serve to make the confusion greater.



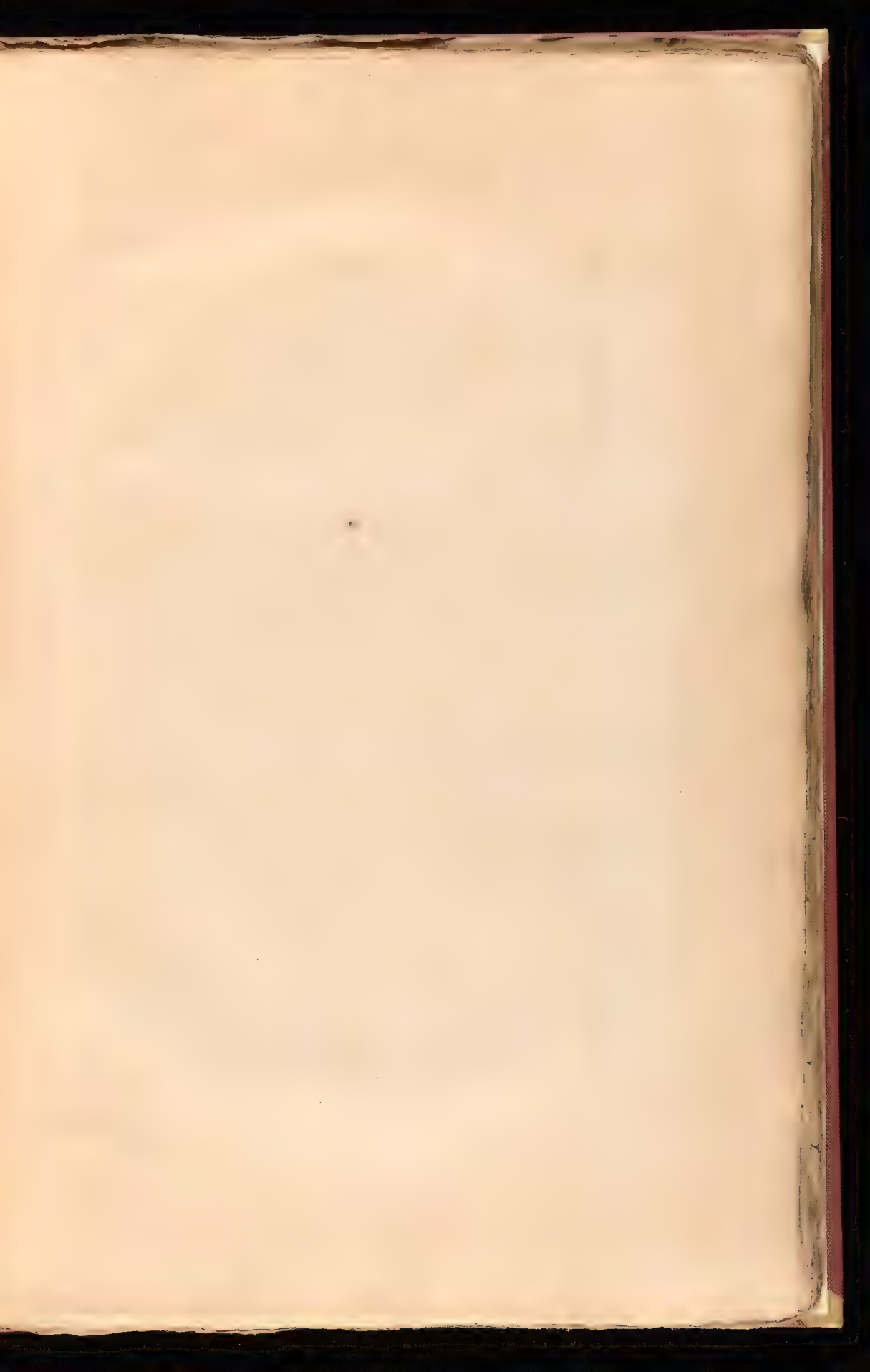
The Flutings may be filled to one third of their Height with Cablings, as in the inside of the Pantheon; which will strengthen the lower part of the Column, and make it less liable to injury. But if the Columns are not within reach, or subject to be hurt by passengers, these are better omitted: for the general Hue of the Column will then be more even. In some very rich buildings, the Cablings are composed of Reeds, Ribands, Huks, Flowers, &c. (at the Thuilleries in Paris there are some exquisitely wrought by Jean Gougeon's own hand,) but it is better to reserve such niceties for interior decorations. In the exterior, whatever doth not contribute to the general effect of the whole building, is in a great measure useless, and an expence that might more judiciously be employed in places where it would be more attended to. In general, excessive Ornaments, though they encrease the Magnificence of a building, always destroy the Grandeur of its effect. The parts that in themselves are large, and so formed and disposed as to receive broad masses and strong impressions of light and shade, will of course excite great ideas: but if they are broken into a number of small divisions, and their surface so varied as to catch a thousand impressions of light, demi-tint, and darkness, the whole will be confused, trifling, and incapable of causing any grand emotions.

THE Capital is enriched with Olive-Leaves, as almost all the Antiques at Rome of this Order are; the Acanthus being seldom employed but in the Composite. De Cordemoy, however, prefers the Acanthus; and observes that the flexible Sprigs, which accompany the Leaves of that plant, may more naturally be supposed to form the Contour of the Volutes, than the stiff branches of a Laurel or Olive. It is strange, says he, that people soon cease to esteem what is natural: nature and reason must always be violated, and we prefer a confused jumble of little pointed leaves of the Olive or Laurel, to the simple and graceful Contours of the Acanthus.

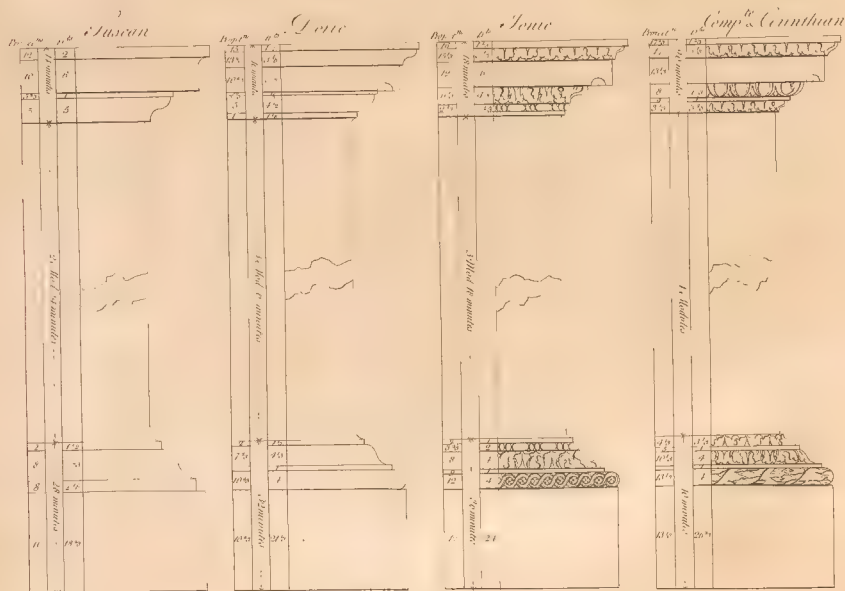
WITH regard to the manner of tracing and working the Capital, the Designs, together with what hath been said on the same head under the Composite Order, will sufficiently explain it.

THE divisions of the Entablature bear the same proportion to each other as in the Tuscan, Ionic and Composite Orders. The Frize is enriched with a Bas Relief, composed from various fragments in the Villa Medici at Rome. The Parts and Ornaments of the Cornice are all regularly disposed: the Coffers in the Soffit of the Corona are square, and the borders round them alike on all sides; as they are at the Arch of Titus, and as Palladio hath made them: a precaution which Vignola neglected.

THE Antients frequently employed the Ionic Entablature in the Corinthian Order, as appears by many of their buildings, and, according to Vitruvius, sometimes the Doric: though of the latter there is now no example extant. He observes that the Greeks never employed the Dentils under the Modillions in their works; because the Rafters, which are represented by the Dentils, can never in reality be placed under the Principals, which are represented by the Modillions. However this may be, it is certain that the Romans were not so scrupulous; and in their most esteemed works, such as the Temple of Jupiter Stator, the Forum of Nerva, the Temple of Jupiter Tonans, and several others, we find the Dentils placed under the Modillions. These examples will sufficiently authorise the same practice. The origin and reason of things of this nature are remote, and known to few; but the general effect of a composition is obvious



## Plans and Elevations of Plaster Capitals.



*Pedestals for the Orders.*



obvious to all: therefore, if deviating from the former of these will remarkably contribute towards the perfection of the latter, it cannot be censured; providing the practice be generally approved, and hath stood the test of several ages. The example of a certain Florentine Architect must nevertheless be avoided; who, for variety's sake, hath in the Church of St. Romolo at Florence placed the Capitals at the feet of the Columns: for things, that are evidently absurd, no time can sanctify.

WHEN a Modillion Cornice is employed on a Concave Surface, the sides of the Modillions must tend towards the center of the curve, as in the Pantheon; and the same must be observed with regard to the Dentils: but on a Convex Surface, the sides of both must be parallel to each other; for it would be disagreeable to see them narrowest where they spring out of the Cornice.

THE Corinthian Entablature may be reduced to two ninths, or one fifth, of the Height of the Column, by the same rule as in the Ionic and Composite Orders. But when it is necessary to make it so small as one fifth, it will be best to use the Ionic Entablature, as Palladio hath done in the Peristyle of the Olympic Theatre at Vicenza, and in many others of his buildings; or to retrench the Dentils of the Cornice, as in Serlio's and Scamozzi's Profiles; the part of the Cornice under the Modillion-Band being composed only of the Ovolo and Oge separated by a Fillet; as at the Temples of Trevi and of Scifi in Umbria, mentioned by Palladio in his fourth Book.

THE Corinthian Order is proper for all buildings, where Delicacy, Gayety, and Magnificence are required. The Antients used it in Temples dedicated to Venus, Flora, Proserpine, and Nymphs of Fountains; because the Flowers, Leaves, and Volutes, that adorned it, seemed well adapted to the Delicacy of these Deities. As it is the most Magnificent of all the Orders, it is extremely proper for Palaces, publick Squares, and Churches dedicated to the Virgin Mary, or other Virgin Saints; and on account of its Gayety it may likewise be used in Theatres, Banqueting-Rooms, and all Places consecrated to Mirth and Pleasure.

### *Of Pilasters.*

**P**ILASTERS differ from Columns in their Plan only; which is square, as that of Columns is round. Their Bases, Capitals, and Entablatures have the same Parts, with the same Heights and Projections, as those of Columns; and they are distinguished, in the same manner, by the Names of Tuscan, Doric, Ionic, Composite, and Corinthian.

OF the two the Column is, without doubt, the most perfect. Nevertheless there are various occasions, in which Pilasters may be employed with great propriety. I am not ignorant that several Authors are of a different opinion: a certain French Jesuit in particular; who a few years ago published an Essay on Architecture, wherein he inveighs vehemently against them.

HIS Objections are, that they have sharp and inconvenient Angles, which obstruct the View, indicate the confined State of Art, and deviate in a striking manner from the simplicity of Nature; that their Surfaces, having no roundness, give a flat appearance to the whole Order; that they are not susceptible of diminution, one of the greatest beauties

beauties of Columns; and that they are never necessary, because Columns will on all occasions answer the same end.

It is indeed true that Pilasters have angles, which may sometimes obstruct the view a little, but never so much as to be attended with any bad consequences: nor do these angles occasion any inconveniency at all; unless a passenger should happen to run his head against them; in which case, the pain will probably be more acute, than if he had hit it against the Shaft of a Column. Why the angular form of a Pilaster should indicate any constraint in the Art, doth not appear to me, any more than that this form is a visible deviation from the simplicity of nature. It is as difficult to execute, with the utmost accuracy, the Shaft of a Pilaster, as the Shaft of a Column; and there are many forms in nature much more complicated than that of a Pilaster, which differs but little from a square Prism, one of the simplest of regular solids. With regard to the flatness, which he supposes to be the result of employing Pilasters, if he thereby means flatness in opposition to convexity, he is certainly right; but if he means that the effect of Pilasters is less striking than that of Columns, I believe he is in an error: for the transition from light to shade in the Column is gradual and easy, but in the Pilaster it is abrupt, and strongly contrasted. The variations in the surface of the Column are flowing, and insensible; those in the surface of the Pilaster are rapid, and in directions very opposite; and consequently more apt to produce sudden and violent impressions on the imagination.

To assert that Pilasters are not susceptible of diminution, shews very little acquaintance either with books of Architecture, or with buildings. There are many instances, in the remains of Antiquity, of their being diminished. Scamozzi always gave to his Pilasters the same diminution as to his Columns: Palladio has diminished them in the church of the Redentore at Venice, and in many others of his buildings; as Inigo Jones hath likewise done in many of his, particularly in the Banqueting-House at Whitehall. And if we go back to the origin of things, and consider Pilasters, either as representing the ends of the partition walls, or trunks of trees reduced to the diameter of the round trunks which they accompany, but left square for greater strength, the reasons for diminishing them will, in either case, be strong and evident. It is likewise an error to assert that Pilasters are never necessary; but that Columns will always answer the same end: for, at the Angles of all buildings, they are evidently necessary, both for solidity and beauty; because the angular support, having a greater weight to bear than any of the rest, ought to be so much the stronger; so that its diameter must either be increased, or its plan altered from a circle to a square; the latter of which is certainly the most reasonable expedient, on several accounts; but chiefly as it obviates a very striking defect, occasioned by employing Columns at the Angles of a Building, which is that the Angle of the Entablature is left hanging in the air without any support: a sight very disagreeable in some oblique views, and in itself very unsolid. It is, indeed, customary in Porches, and other detached Compositions, to employ Columns at the Angles; and it is judicious so to do: for of two defects the least is to be preferred. And though Father Laugier, the writer whose objections I have just now cited, could see no reason for rejecting detached Pilasters, when engaged ones were suffered; yet there is a very substantial one, viz. that a detached Pilaster, in some oblique views, appears thicker than it does in Front, in the ratio of seven to five nearly; and consequently if, when seen in Front, it appears well proportioned in itself, and with regard to the Columns it accompanies, it never can appear so when viewed upon the Angle; as may be seen in the Porticos of the

Cortile

Cortile at Burlington-House in Piccadilly, and in the Porch of St. George's Church, Hannover-Square.

PILASTERS are employed in Churches, Galleries, Halls, and other interior Decorations, to save room: for as they seldom project beyond the solid of the walls more than one quarter of their diameter, they do not occupy near so much space, even as engaged Columns. They are likewise employed in exterior Decorations: sometimes alone, instead of Columns, on account of their being less expensive; as at the Duke of Queensbury's House in Burlington-Garden, General Wade's House in the same place, and in many other Buildings in London: at other times they accompany Columns, being placed behind them to support the Architraves, where they enter the Building; as in the Panthæon at Rome, and in the Porch of St. Martin's in the Fields Westminster; or on the same line with them, to fortify the Angles; as in the Portico of Septimius at Rome, in the Church of St. Laurence Jewry, and in a pretty House lately built in Lombard-Street by Mr. Taylor, for Sir Charles Asgill, late Lord Mayor of London. Blondel says they may likewise be employed instead of Columns, detached to form Peristyles and Porticos: But there is no instance of this, that I remember, in all the remains of Antiquity; neither hath any Modern Architect, I believe, been so destitute of taste as to put it in practice.

WHEN Pilasters are used alone, as Principal in the Composition, they should project one quarter of their diameter beyond the walls, as Scamozzi teaches, and as they do at the Banqueting-House; which gives them a sufficient boldness, and, in the Corinthian and Composite Orders, is likewise most regular; because the Stalks of the Volutes, and the small Leaves in Flank, are then cut exactly through their middles: but if the Cornice of the windows should be continued in the Interpilasters, as is sometimes usual, or if there should be a Cornice to mark the separation between the principal and second Story, as at the Mansion-House, or large Imposts of Arches, the Projection must be increased, provided it is not otherwise sufficient to stop the most prominent parts of these Decorations; it being very disagreeable, to see several of the uppermost Mouldings of an Impost or Cornice cut away, in order to make room for the Pilaster, while the Cornice or Impost on each side projects considerably beyond it; as in St. Peter's of the Vatican, and several other Buildings at Rome.

WHEN Pilasters are placed behind Columns, if they be very near them, they need not project above one eighth of their diameter, or even less; excepting there be Imposts, or continued Cornices, in the Interpilaster: in which case what hath been said above must be attended to. But if they be far behind the Columns, as in Porticos, Porches, and Peristyles, they should project one sixth of their diameter at least; and, when they are on a line with Columns, their Projection is to be regulated by that of the Columns; and consequently, it never can be less than a semi-diameter, even when the Columns are engaged as much as possible. This extraordinary Projection, however, will occasion no very great dissimilarity; as the largest apparent breadth of the Pilaster will exceed the least, only in the ratio of eleven to ten, or thereabouts. But if the Columns be detached, the Angular Pilaster must always be coupled with a Column, to hide it's inner flank; as in the Porticos of Burlington-House: because the Pilasters will otherwise appear very disproportionate, when seen from the point of view proper for the whole building; especially, if the fabric be small, and the point of view near.



It is sometimes customary to execute Pilasters without any diminution. In the Antiques there are several instances thereof, as well as of the contrary practice; and Palladio, Vignola, Inigo Jones, and many of the greatest Architects, have frequently done so. Nevertheless it is certain, that diminished Pilasters are, on many accounts, much preferable. There is more variety in their form; their Capitals are better proportioned, both in the whole, and in their parts, particularly in the Composite and Corinthian Orders; and the irregularities occasioned by the passage of the Architraves, from diminished Columns to undiminished Pilasters, are avoided, as are likewise the difficulties of regularly distributing the Modillions and other parts of the Entablature, either when the Pilasters are alone, or accompanied with Columns.

ANOTHER disagreeable effect of undiminished Pilasters is likewise obviated by rejecting them. Indeed, I am at a loss to account for it; and as it is diametrically opposite to a received law in Optics, I imagined it might be the result of some defect in my own sight, till by enquiry I found others were affected in the same manner. It is this: that the top of the Shaft appears broader than the bottom of it; as any one may experience by casting a glance on the Pilasters of St. Paul's, of St. George's Hannover-Square, or any others that are not diminished. The Author of *l'Essai des Beaux-Arts* accounts for a similar effect in a manner more subtle, I believe, than true. He makes it to be the result of a nice comparison between the real and the apparent distance; which to me seems to have little or rather no share at all in it. A late ingenious \* writer of our own country observes, that the senses, strongly affected in some one manner, cannot quickly change their tenour, or adapt themselves to other things; but continue in their old channel, untill the strength of the first mover decays: whence it is not improbable, that the Capital, which is immediately above the Shaft, and considerably broader than the Shaft, may have an influence on it's apparent breadth, and occasion the effect above mentioned. Perhaps too the light may in some measure contribute thereto, it being stronger at the foot of the Shaft than towards it's top.

THE Shafts of Pilasters are sometimes adorned with Flutings, in the same manner as those of Columns; the Plan of which may be a trifle above a semi-circle: and they must be to the number of seven on each face, which makes them nearly of the same size, as those of the Columns. The Interval between them must be either one third, or one fourth, of the Fluting in breadth; and when the Pilaster is placed on the pavement, and liable to be broken, the Angle may be rounded off, in the form of an Astragal; between which and the adjoining Fluting there must be a Fillet, or Interval, of the same size with the rest: as in the Porch of the Pantheon at Rome. The Flutings may like those of Columns, be filled with Cablings, to one third of their Height; either plain and shaped like an Astragal, or enriched, according as the rest of the Composition is simple, or much adorned. Scamozzi is of opinion that there should be no Flutings on the sides of engaged Pilasters, but only in Front. When Cornices or Imposts are continued quite home to the Pilaster, this is particularly to be observed; because the different Mouldings of these parts, entering upon the Cavities of the Flutings, are cut off in irregular and very disagreeable figures: but if the Flanks of the Pilaster are entirely free, it will be as well to enrich them in the same manner with the Front: provided the Flutings can be so distributed as to have a Fillet or Interval adjoining to the wall; which is necessary to mark the true Shape of the Pilaster distinctly.

THE Capitals of Tuscan or Doric Pilasters are profiled in the same manner as those of the respective Columns: but in the Capitals of the other Orders there are some trifling

\* See Enquiry into the Origin of our Ideas of the Sublime and Beautiful.

differences to be observed. In the Antique Ionic Capital, the extraordinary projection of the Ovolo makes it necessary, either to bend it inwards considerably towards the extremities, that it may pass behind the Volutes, or instead of keeping the Volutes flat in Front, as they commonly are in the Antique, to twist them outwards for the same end. Le Clerc thinks the latter of these expedients the best; and, that the artifice may not be too striking, the projection of the Ovolo may be considerably diminished, as in the annexed Design \*; which, as the Moulding can be seen in Front only, will occasion no disagreeable effect. The same difficulty subsists with regard to the passage of the Ovolo behind the Angular Ionic Volutes. Le Clerc therefore advises to open, or spread, the Volutes sufficiently, to leave room for the Ovolo to pass behind them, as in the Design † annexed; which may easily be done, if the projection of the Ovolo is diminished. Inigo Jones hath, in the Banqueting-House, made the two sides of the Volutes parallel to each other, according to Scamozzi's manner; and at the same time hath continued the Ovolo in a straight line under them: so that the Volutes have an enormous projection, and the whole Capital is of a very ugly figure.

WHAT hath been said, with regard to the passage of the Ovolo behind the Volutes in the Ionic Order, must likewise be remembered in the Composite; and in the Corinthian, the lip or edge of the Vase, or Basket, may be bent a little inwards toward its extremities; by which means it will easily pass behind the Volutes. The Leaves, in the Corinthian and Composite Capitals, must not project beyond the top of the Shaft, as they do at St. Carlo in the Corso at Rome, and in the Banqueting-House at Whitehall; but the diameter of the Capital must be exactly the same as that of the top of the Shaft: and to make out the thickness of the small Leaves, their edges may be bent a trifle outwards; and the large angular Leaves may be directed inwards, in their approach towards them, as in the annexed Design §, and as executed in the Church of the Roman College at Rome; where the small Leaves have a considerable thickness, though the diameter of the Capital is exactly the same as that of the Shaft. In each Front of the Composite or Corinthian Pilaster-Capital there must be two small Leaves, with one entire, and two half large ones. They may be of Olive, Acanthus, Parsley, or Laurel, and be divided and wrought in the same manner as those of the Columns are; the only difference being, that they will be somewhat broader.

THE employing half, or other parts, of Pilasters, that meet, and as it were penetrate each other, in inward angles, should as much as possible be avoided; because it generally occasions several irregularities in the Entablatures, and sometimes in the Capitals. But particular care must be taken, never to introduce more than one of these Breaks in the same place; for more can never be necessary. In many of the Churches at Rome we see half a dozen of them together; which produces a long series of undulated Capitals and Bases, and a number of mutilated parts in the Entablature: than which nothing can be more confused or disagreeable. Instead of Pilasters it is sometimes customary to employ Columns, that penetrate each other in the inward angle. There are several instances of this at Paris: but it is a practice universally condemned, and the bad effect thereof may be seen in the Front of the Royal Exchange towards Cornhill, and in the Banqueting-House at Whitehall.

\* Pl. of Pilasters fig. 1.

† Pl. of Pilasters fig. 2.

§ Pl. of Pilasters fig. 3.

*Of Persians and Caryatides.*

**B**ESIDES Columns and Pilasters, it is sometimes customary to employ representations of the human figure, to support Entablatures in Buildings. The Male figures are called Persians, Telamones, or Atlantes; and the Females Carians, or Caryatides. The origin of this custom Vitruvius tells us is as follows:

THE inhabitants of Caria, a city of the Peloponnesus, having joyned the Persians in a war against the rest of the Greeks, and that war being terminated by the defeat of the Persians, the Greeks declared war against the Caryates, took their city, demolished it, put all the Males to the sword, carried the Females into captivity; and, to treat them with the greater ignominy, forbid the Ladies to divert themselves of their robes, or any of their ornaments, that so they might not only be once led in triumph, but, in a manner, suffer the shame of it all their lives after, by appearing constantly in the same dress as on the day of triumph: and further, as an everlasting testimony of the punishment inflicted on the Caryates, and to inform posterity what had been the nature of their chastisement, the Architects of that time, instead of Columns, employed the representations of these Women to support the Entablatures in their public Buildings. The Lacedemonians did the same thing after the battle of Plataea; erecting, with the spoils taken from the enemy, a gallery, which they called Persian, wherein statues, in the form of captive Persians, in their usual dresses, supported the vault; intending thereby to punish that nation in such a manner as its pride had merited, and leave to posterity a monument of the valour and victories of the Lacedemonians.

AMONGST the Antiquities at Rome there are various fragments of Male figures, which from their attitudes, and some ornaments about them, may be conjectured to have served as supports to the Entablatures of buildings: but there are no remains of the Female statues of that kind, excepting the three Graces that support an urn in the Villa Borgheze; though Pliny mentions some that were in the Pantheon, which Fontana supposes were placed above the Columns, to support the Cornice of the Attic. In the Antiquities of Athens, lately published by Mr. le Roy, (and of which we may soon hope to see another very perfect account, illustrated with a great number of beautiful Plates, by Messrs. Steward and Ryvet), there are five Caryatides that support an Entablature, contiguous to the Temple of Erechtheus, which Mr. le Roy says are very beautiful.

It is not now customary, says le Clerc, as formerly, to represent Caryatides, with attributes of slavery and servitude. Such Characters are too injurious to the fair sex. On the contrary they are, at present, considered as the richest and most valuable Ornaments of buildings; being represented under the figures of Prudence, Wisdom, Justice, Temperance, &c.

DE CHAMBRAY blames this practice, and considers it as the effect of inadvertency, in the Architects who first introduced it; observing that, if they had sufficiently reflected on the text of Vitruvius, with regard to the origin of Caryatides, they would have perceived the impropriety of employing the representations of Saints and Angels, loaded, like slaves, with Cornices, and other heavy burdens; and likewise that of employing the Caryatic Order promiscuously, in all sorts of buildings; particularly in Sacred Structures, which



*Persians and Caryatides.*



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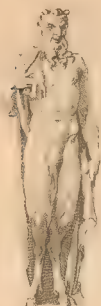
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*Allegorie de la*

*Cyprien, comp.*



which are the Houses of God, and Asylums of Mercy, where vengeance and slavery ought never to appear.

ON the other hand Blondel observes, that, though this remark be just, if the origin of these Ornaments be rigorously attended to; yet, to serve in any shape in the House of God, and in particular at the Altar, hath always appeared, in the minds of the Prophets, and the best of the Saints, so glorious and great, that not only Men, but Angels, ought to esteem it a happiness; and that consequently it can be no indication of disrespect, to employ their representations, in offices which they themselves would execute with pleasure.

THE Antients, says Blondel, made frequent use of Caryatic and Persian figures, and delighted in diversifying them in a thousand manners. The Modern Artists have followed their example: and there is a great variety of Compositions of this kind to be met with, in different parts of Europe; of some of which Designs are exhibited in the annexed Plate, and others may be invented, and adapted to different purposes with great propriety; provided the figures introduced be analogous to the subject, as Mr. Ware observes, and seem at least a necessary part in the Composition. Thus, says le Clerc, if they are employed to support the covering of a Throne, they may be represented under the figures and symbols of Heroic Virtues; if to adorn a Sacred Building, they must have an affinity to Religion; and when they are placed in Banqueting-Rooms, they must be of kinds proper to inspire Mirth and Jollity.

IN composing them particular care must be taken to avoid indecent attitudes, distorted features, and all kinds of monstrous and horrid productions, of which there are such frequent instances in the works of the Goths. On the contrary, the attitudes must be simple and graceful, the countenances always pleasing, though varied, and strongly marked with the expression peculiar to the occasion and object represented. There must be but little flutter in the drapery, which ought to fit pretty close to the body, and its folds should be contrived to express distinctly both the action and shape. Le Clerc observes that they should always have their legs close together, and their arms close to the body or head; that so they may have, as much as possible, the form of Columns, whose office they are to perform: and it may be added that, for the same reason, their attitude should be as near a perpendicular as it can conveniently be, without giving a stiff and constrained air to the figure.

THE same Author observes that Caryatides ought always to be of a moderate size; lest, being too large, they should appear hideous in the eyes of the Ladies: and indeed, as these figures are generally represented in endearing offices, and under the forms of amiable and benevolent Beings, the caution seems to be extremely proper; and it will therefore be judicious never to make them much larger than the human stature.

BUT the Male figures may, on the contrary, be of any size, and the larger the better; as they will then be fitter to strike with awe and astonishment. There is not a nobler thought, in all the remains of Antiquity, than Inigo Jones's Persian Court; the effect of which, if properly executed, would have been surprising and great, in the highest degree. Male figures may be introduced with great propriety in Arsenals, or Galleries of Armour, in Guard-Rooms, and other Military places, where they may be represented under the figures either of Captives, or of Martial Virtues; such as Strength, Valour, &c. Their Entablature must be Doric, and bear the same proportion to them, as to Columns



of the same Height: and the proper Entablatures for Caryatides will be either Ionic, or Corinthian, according as the Character of the figures is more or less delicate. Persian or Caryatic figures ought never to be employed to support the same Entablature with Columns: for figures of Men or Women, as high as Columns, are considerably more bulky; and, when they are of an uncommon size, carry with them an idea of greatness that entirely destroys the effect of the Columns, making them appear very trifling: neither should they be placed upon Columns, as in the Court of the Old Louvre at Paris, for the same reasons.

It is sometimes customary to employ Terms, instead of Caryatides or Persians, to support the Entablatures of Monuments, Chimney-Pieces, and such like Compositions. These figures owe their origin to the stones, used by the Antients to mark the limits of each particular persons possessions. Numa Pompilius, to render these inviolable, and to prevent usurpations, erected the Terminus into a Deity, instituted festivals and sacrifices to his honour, and built a Temple on the Tarpejan Mount, which he dedicated to him, and in which he was represented under the figure of a stone.

In process of time, however, the God Terminus was represented with a human head, placed on a post or stone, shaped like an inverted Obelisk; which being, on particular solemnities, adorned with Garlands, composed altogether a very pleasing form: to which may with great probability be attributed the introduction of these Ornaments into Buildings, where they have been varied into a vast diversity of Shapes. I have occasionally, in the course of this work, given some Designs of them; and others may be invented, relative to the particular purposes for which they shall be intended.

In consideration of their origin, the Termini are proper Ornaments in Gardens, and in Fields; where the upper part of them may represent Jupiter, who, in the remoter ages of Antiquity, was Protector of Boundaries, or some of the Rural Deities, as Pan, Flora, Pomona, Vertumnus, Ceres, Priapus, Faunus, Sylvanus, Satyrs, &c.: and Mr. Ware recommends the use of them as Boundaries to Counties, where they may be enriched with Ornaments alluding to the Produce, Manufacture, and Commerce of each respective County.

THE three first figures, in the annexed Plate of Persians and Caryatides, are copied from Candelabres in St. Peter's of the Vatican. They are cast from models of Michael Angelo Buonarroti, and repaired either by himself, or under his direction: for the workmanship is very perfect. Figure 2 may be employed in Buildings; but the other two are properer for the angles of coved Ceilings, or other ornamental works. No. 4 is a copy of one of the figures that surround the Choir, in the Cathedral of Milan, which are the work of Andrea Biffi, a celebrated Milanese sculptor. No. 5 is executed in the Judgement-Hall, in the Town-House of Amsterdam, by Artus Quellinus. No. 6 is an admired work of M. Angelo, now in the Villa Ludovisi at Rome. No. 7 is, in part, by the same hand, and executed, from the waist upwards, in the Monument of Julius the Second in the Church of St. Pietro in Vincoli at Rome. No. 8 is a work of the celebrated Jean Goujon, in the Guard-Room of the Old Louvre, at Paris. No. 9 and 10 are taken from Paintings of Daniel da Volterra, in the Church of the Trinita del Monte, at Rome. No. 11 is a figure in a Bassò Relievo on the Goldsmith's Arch; and No. 12 is copied from an original Design of Polidore da Caravaggio.

### *Of Pedestals.*

**M**OST writers consider the Pedestal as a necessary Part of the Order, without which it is not esteemed complete. It is indeed a matter of small importance, whether it be considered in that light, or as a distinct Composition. Nevertheless, seeing that in the particular description, given by Vitruvius, of the Doric, Corinthian, and the Tuscan Orders, no notice is taken of any Pedestal; and that, in the Ionic Order, he only mentions it as a necessary Part in the Construction of a Temple, without signifying that it belongs to the Order, or assigning any particular proportions for it, as he doth for the Parts of the Column and the Entablature, I judged it more regular to treat of the Pedestal as a separate body; having no more connection with the Order than an Attic, a Basement, or any other Part with which it may, on some occasions, be associated.

A Pedestal is composed of three principal Parts; which are the Base, the Dye, and the Cornice. The Dye is always nearly of the same figure; being constantly either a Cube or a Parallelopiped; but the Base and Cornice are varied, and adorned with more or fewer Mouldings, according to the simplicity or richness of the Composition, in which the Pedestal is employed. Hence Pedestals are, like Columns, distinguished by the names of Tuscan, Doric, Ionic, Composite, and Corinthian.

SOME Authors are very averse to Pedestals, and compare a Column raised on a Pedestal to a man mounted on stilts; imagining that they were at first introduced merely through necessity, and for want of Columns of a sufficient length. It is indeed true that the Antients often made use of artifices to lengthen their Columns; as appears by some that are in the Baptistery of Constantine at Rome; the Shafts of which, being too short for the building, were lengthened, and joined to their Bases, by an undulated sweep, adorned with Acanthus Leaves. And the same expedient hath been made use of in some fragments, which were discovered a few years ago at Nîmes, contiguous to the Temple of Diana. Nevertheless it doth not seem proper to comprehend Pedestals in the number of these artifices; since there are many occasions where they are evidently necessary, and some in which the Order, were it not so raised, would lose much of it's beautiful appearance. Thus, in the insides of our Churches, if the Columns that support the Vault were placed immediately on the ground, the seats would hide their Bases, and a good part of their Shafts; and, in the Theatres of the Antients, if the Columns of the Scene had been placed immediately on the Stage, the actors would have hid a part of them from the audience. For this reason it was usual to raise them on very high Pedestals; which was likewise customary in their Triumphal Arches: and, in most of their Temples, the Columns were placed on a Basement, or continued Pedestal; that so the whole Order might be exposed to view, notwithstanding the crowds of people with which these places were frequently surrounded: and the same reason will authorise the same practice in our Churches, and other publick buildings. In interiour decorations (where, in general, grandeur of style is not to be aimed at,) a Pedestal diminishes the parts of the Order, which otherwise might, perhaps, appear too clumsy, and hath the advantage of placing the Column in a more favourable view, by raising it's Base nearer to the level of the spectator's eye: and, in a second Order of Arcades, there is no avoiding Pedestals; as without them it is impossible to give the Arches any tolerable proportion. Sometimes too the situation makes it necessary to employ them: an instance of which there is in the Luxembourg at Paris; where the body of the building standing on higher ground than the wings, the Architect was

obliged to raise the first Order in the wings on a Pedestal, to bring it up on a level with that in the body of the building, which stands immediately upon the pavement.

THESE instances will sufficiently shew the necessity of admitting Pedestals in Decorations of Architecture. With regard to the proportion that their Height ought to bear to that of the Columns which they are to support, it is by no means fixed; the Antients, and Moderns too, having in their works varied greatly in this respect, and adapted their proportions to the respective purposes for which the Pedestals were intended. Thus, in the Amphitheatres of the Antients, the Pedestals in the superiour Orders were generally low; because in the intervals of the Arches they served as rails to enclose the Portico, and therefore were, for the conveniency of leaning over, made no higher than was just necessary to prevent accidents: and the case is the same in most of our modern houses; where the Height of the Pedestals in the superiour Orders is generally determined by the bottoms of the windows. The Antients, in their Theatres, made their Pedestals in the first Order of the Scene pretty high, for the reason mentioned in the beginning of this Chapter: but the Pedestals in the superiour Orders were very low; as their principal use was to raise the Columns, so as to prevent any part of them from being hid by the projection of the Cornice under them. And thus, on different occasions, they used different proportions; being chiefly guided by necessity in their choice. The Moderns have followed their example; as will appear to any one who examines the works of Palladio, Vignola, Michael Angelo, Scamozzi, &c.

YET the writers on Architecture have always thought it incumbent upon them to fix a certain determinate proportion for the Pedestal, as well as for the Parts of the Order. It will be needless to enumerate, in this place, their different opinions: but I must observe that Vignola's method is the only right one. His Pedestals are, in all the Orders, of the same Height, being one third of the Column; and as their breadth of course encreases or diminishes in the same degree as the diameters of their respective Columns do, the Character of the Order is always preserved; which according to any other method is impossible.

IN the Designs which I have given of Arches with Pedestals, the Pedestals are all of the same Height; each of them being three tenths of the Height of the respective Columns. But it is not necessary to adhere always to this proportion: they may be higher or lower, as the occasion shall require. It is, however, to be observed, that, when Pedestals are profited under each Column, and the Dye is much less than a square in Height, the Pedestal hath a clumsy figure; and when a Pedestal of the same kind exceeds one third of the Height of the Column, it hath a lean and unfolid appearance: but if they are continued without any Breaks, this need not be attended to; though indeed there are very few occasions in which Pedestals higher than one third of the Column ought to be suffered, as they lessen too much the Parts of the Order, and become themselves too principal in the Composition.

WITH regard to the divisions of the Pedestal, if the whole Height be divided into nine parts, one of them may be given to the Height of the Cornice, two to the Base, and the remaining six to the Dye; or if the Pedestal is lower than ordinary, it will be better to divide it's Height into eight parts only, giving one of them to the Cornice, two to the Base, and five to the Dye; as Palladio hath done in his Corinthian Order, and Perrault in all the Orders. The breadth of the Dye is always made equal to that of the Plinth of the Column: the projection of the Cornice may be made equal to it's Height, and the Base being



being divided into three parts, two of them will be for the Height of the Plinth, and one for the Mouldings, whose Projection must be less than that of the Cornice, that so the whole Base may be covered and sheltered by it: a precaution which Scamozzi hath observed in all his Designs, though Palladio hath neglected it in the greatest part of his; the Palace of the Porti, and one or two more buildings in the Vicentine excepted. These measures are common to all Pedestals; and in the annexed Plate there are Designs of proper ones for each Order, in which the forms and dimensions of the minuter parts are accurately drawn and figured.

It is sometimes customary to adorn the Dyes of Pedestals with projecting Tablets, or Pannels sunk in, and surrounded with Mouldings. The former of these ought seldom to be admitted of; as such Tablets alter the general figure of the Pedestal, and, if they project much, give it a heavy look: and the latter should be reserved for very large Pedestals only, such as those that support the Trajan and Antonin Columns at Rome, and the Monument in London; where they may be adorned with Bas-Reliefs, analogous to the occasion on which the Column was erected. But in Buildings the Pedestals are too small to admit of these Ornaments, which serve only to weaken them, and give them a trifling appearance.

With regard to the application of Pedestals, it must be observed, that, when Columns are entirely detached, and at a considerable distance from the wall, as when they are employed to form Porches, Peristyles, or Porticos, they should never be placed on detached Pedestals, as they are in Scamozzi's Designs, in the Temple of Scifi mentioned by Palladio, and at Lord Archer's House in Covent-Garden: for then they may indeed be compared to men mounted on stilts, as they have a very weak and tottering appearance. In general it is best, in Compositions of this kind, to place the Columns upon the pavement, which may either be raised on a continued solid Basement, or ascended to by a flight of fronting steps, as at St. Paul's, and St. George's Bloomsbury: but if it be absolutely necessary to have a Balustrade, or Fence, in the Intercolumniations, (as in the case of Bridges, or other buildings on the water, and likewise in a second Order,) the Columns may, in very large buildings, be raised on a continued Plinth, (as in the Porch of St. Paul's,) which will be sufficiently high; and in smaller buildings, when it is not convenient or proper to place the Balustrade between the Shafts, the Columns may be raised on Pedestals; as in Palladio's Design for Signior Cornaro at Piombino, and at the Villa Arfieri, near Vicenza, a very beautiful Design by the same hand. It will be best to continue the Base and Cornice of these Pedestals in a straight line throughout, without any breaks on the outside: but the Dyes ought to be no broader than the Plinths of the Columns; and the intervals between them should be filled with Balusters: which is both really and apparently lighter than if they were continued.

It will be needless to caution our English Architects against employing Triangular, Circular, or Polygonal Pedestals in their buildings; or such as are swelled, and have their Dye in the form of a Baluster, or surrounded with Cinctures. Such extravagancies, though frequent in some foreign countries, are seldom to be met with in England, and are now laid aside wherever good taste prevails.

In my Designs of Pedestals \* I have represented them under the proportions observed by me in Arches with Pedestals: but when it is necessary to vary the general Height, the measures of the particular members may easily be determined, by dividing the whole Height

\* See Pl. of Pilasters.

in the Tuscan Order into  $4\frac{1}{2}$  Parts; in the Doric into  $4\frac{2}{3}$ , in the Ionic into  $5\frac{1}{3}$ , and in the Composite and Corinthian into 6 Parts; making use of one of these Parts as the Module, and determining the Heights and Projections according to the figures in the Designs.

### *Of the Application of the Orders of Architecture.*

**A**MONG the Antients the use of the Orders was very frequent: many parts of their Cities were provided with Spacious Porticos; their Temples were surrounded with Colonnades; and their Theatres, Baths, Basilicas, and other publick Buildings, were profusely enriched with Columns; as were likewise the Courts, Vestibules, and Halls, of their private Houses.

THE Moderns, in imitation of the Antients, have made the Orders of Architecture the principal ornaments of their structures: and we find them employed in almost every building of note; where they are sometimes merely ornamental, and at others of real use, serving to support the covering, or other burdens, placed on them.

ON some occasions they are employed alone: the whole Composition consisting only of one or more ranges of Columns, with their Entablature. At other times the Intervals between the Columns are filled up, and adorned with Arches, Doors, Windows, Niches, Statues, Bas-reliefs, and other similar Inventions. The Columns are either placed immediately on the Pavement, or raised on Plinths, Pedestals, or Bases; either engaged in the walls of the Building, or standing detached at some distance from them; and frequently several Orders are placed one above another, or intermixed on the same level. In all these cases there are particular measures and precautions to be observed, of which I shall give a detail in the following Chapters.

### *Of Intercolumniations.*

**C**OLUMNS are either engaged, or insulated; and when insulated, are either very near the wall, or at a considerable distance from it. With regard to engaged Columns, or such as are near the walls of a building, the Intercolumniations are not limited; as they depend on the breadths of the Arches, Windows, Niches, or other Decorations, placed in them. But Columns that are entirely detached, and perform alone the office of supporting the Entablature, as in Peristyles, Porches, and Galleries, must be near each other, for the sake both of real and apparent solidity.

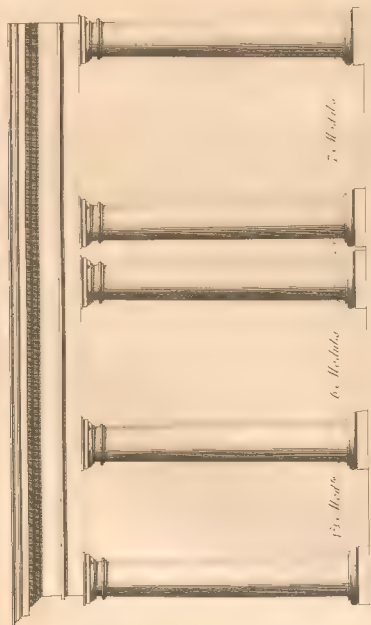
THE Antients had several manners of spacing their Columns, which are described by Vitruvius in his third and fourth Books. Those practised in the Ionic and Corinthian Orders were the Pycnostyle, of which the Interval was equal to one diameter and a half of the Column; the Systyle, whose Interval was of two diameters; the Eustyle of two and one quarter; the Diastyle of three, and the Araeostyle of four. In the Doric Order they used other Intercolumniations, regulating them by the Triglyphs; of which one was always placed directly over the middle of each Column: so that they were either Systyle Monotriglyph of one diameter and a half; Diastyle of two diameters and three quarters;

or

*Intercolumniations*

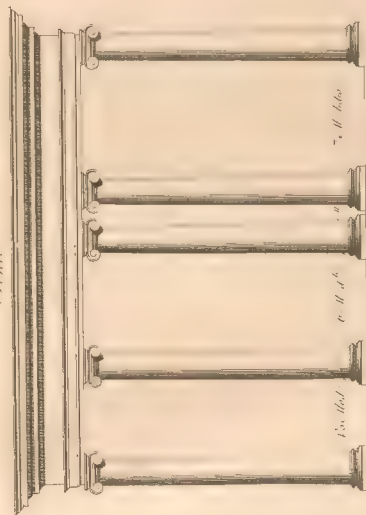
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*Cyrene*



*Isosium*

*Isosium*

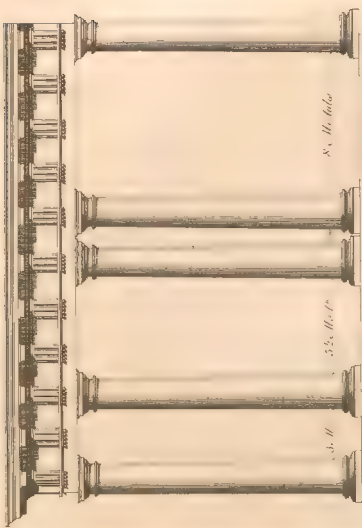


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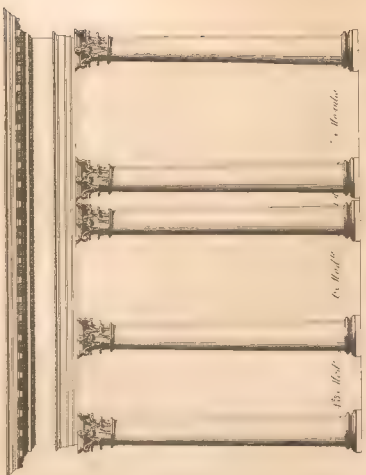


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or *Aræostyle* of four diameters; and the *Tuscan Intervals* were exceeding wide, some of them being above seven diameters: which, as the *Architraves* were of wood, was practicable.

AMONG these different *Intercolumniations*, the *Pycnostyle* and *Systyle* are too narrow: and though Mr. Perrault imagines, from their frequency in the remains of Antiquity, that the Antients delighted more in them than in any of the others, yet, I believe, their use must be ascribed rather to necessity than to choice. For as the *Architraves* were composed of single stones, extending from the middle of one Column to the middle of another, it would have been difficult to find blocks of a sufficient length for *Diastyle Intervals*, in large buildings. With regard to the *Aræostyle* & *Tuscan Intercolumniations*, they are by much too wide, and can only be used in rustic buildings, where the *Architraves* are of wood; nor is the *Diastyle* sufficiently solid in large Compositions. The *Eustyle* is a medium between the narrow and broad *Intervals*; and being at the same time both spacious and solid, hath been preferred, by the Antients as well as the Moderns, to any of the rest.

VITRUVIUS says, in the second Chapter of his third Book, that the thickness of the Column should be augmented, when the *Intercolumniation* is enlarged; so that if, in a *Pycnostyle*, the diameter is one tenth of the Height, it should, in an *Aræostyle*, be one eighth: for if, says he, in an *Aræostyle*, the thickness of the Columns do not exceed a ninth or tenth part of their Height, they will appear too slender and delicate; whereas if, in a *Pycnostyle*, the diameter of the Column be equal to one eighth of its Height, it will appear gouty, and be disagreeable to the eye.

THE intention of Vitruvius was good; but the means by which he proposes to compass it are insufficient. His design was to strengthen the supports, as the *Intervals* between them are enlarged; yet, according to the method laid down by him, it cannot possibly be effected: since one necessary consequence of augmenting the diameter of the Column is the enlarging the *Intercolumniation* proportionally. Palladio and Scamozzi, however, admitted this precept as literally just; and by their manner of applying it have been guilty of a considerable absurdity. It is evident that Vitruvius intended the five *Intercolumniations*, mentioned in his third Book, merely for the *Ionic* and *Corinthian Orders*; the latter of which, according to him, differed from the former only in its Capital: for, in the second and seventh Chapters of his fourth Book, he establishes other *Intervals* for the *Doric* and *Tuscan Orders*. Nevertheless they have employed these *Intercolumniations* in different Orders. For Palladio hath used the *Systyle* in the *Corinthian*, and the *Aræostyle* in the *Tuscan*; by which means the *Corinthian Peristyle*, whose character should be extreme delicacy and lightness, becomes twice as strong and material as the *Tuscan*, whose distinguishing characteristic ought to be extreme solidity: and Scamozzi hath fallen into the same error, though not to so great an excess; his *Tuscan Intercolumniation* being only *Diastyle*.

It may, perhaps, be alledged, in favour of this precept of Vitruvius, that, by following his doctrine, the solidity of the Column is increased or diminished in a greater degree than the breadth of the Interval; the difference of the latter, between Columns of eight or ten diameters in Height, being only as 80 to 100; whereas that of the former is as 64 to 100. But the apparent magnitudes of cylindrical bodies viewed in a vertical position are to each other nearly in the same ratio as their diameters, not as their solid contents: and as the bulk of the *Architrave*, &c. varies exactly in the same proportion as that of the Column does, the real strength of the structure is not in the least affected by it.

VIGNOLA hath observed nearly one and the same proportion in all his Intercolumniations: which practice, though condemned by several eminent writers, is certainly preferable to any other; as it answers perfectly the intention of Vitruvius, preserves the character of each Order, and maintains in all of them an equal degree of real solidity. Setting aside therefore the Pycnostyle and Systyle dispositions, on account of their want of space, and the Araeostyle for it's deficiency in point of strength, it may be established, that the Diastyle Intercolumniation and the Eustyle, of which the latter ought, on most occasions, to have the preference, may be employed without distinction in all the Orders, excepting the Doric; in which the most perfect Interval is the Ditriglyph; neither the Monotriglyph, nor the Araeostyle, being to be suffered but in cases of necessity.

It is, however, to be observed, that, if the measures of Vitruvius be scrupulously adhered to, with regard to the Eustyle Interval, the Modillions in the Corinthian and Composite Cornices, and the Dentils in the Ionic, will not come regularly over the middle of each Column. The Antients, generally speaking, were indifferent about these little accuracies: but the Moderns, taking example by some of the best remains of Antiquity, have with reason kept strictly to them. A trifling alteration will remedy this defect, and, being attended with no inconveniency, it may without hesitation be allowed. I shall, therefore, in imitation of Vignola, instead of two diameters and a quarter, give two diameters and one third to the Eustyle Intercolumniation, not only in the Ionic, Corinthian, and Composite Orders, but likewise in the Tuscan: for I would endeavour to simplify the Art, and avoid an unnecessary encrease of rules, in a Science already too much encumbered with them.

SOMETIMES, on account of the Windows, Doors, Niches, and other Decorations, which correspond with the Intercolumniations of the Peristyle or Gallery, it is not possible to make the Intervals so narrow as Eustyle, or even as Diastyle: wherefore the Moderns, authorized by some few examples of Antiquity, where grouped Columns are employed, have invented a manner of disposing them, by Perrault called Araeostyle, which admits of a larger Interval, without any detriment to the apparent solidity of the building. This kind of disposition is composed of two Systyle Intercolumniations; the Column that separates them being approached towards one of those at the extremities, sufficient room only being left between them for the Projection of the Capitals: so that the great Space is three diameters and a half wide, and the little one only half a diameter.

THIS manner hath been practised in the Porch of St. Paul's in London, and in the principal Front of the Old Louvre at Paris; in the last of which buildings the Decorations of the Niches required so wide an Intercolumniation, that it would never have been supportable, without coupled Columns.

MR. BLONDEL, in his *Cours d'Architecture*, employs several Chapters of his first Book Part 3. to prove the absurdity of the Araeostyle disposition. His principal objections to it are it's want of real solidity; it's extraordinary expensiveness, (requiring near double the quantity of Columns that would be sufficient in the Diastyle,) and the irregularities which it occasions in the Doric, Corinthian, and Composite Entablatures.

THESE objections are too considerable not to deserve attention; and it will always be best to avoid the grouping of Columns. Nevertheless, if on any occasion, either to humour the particular fancy of some capricious patron, or to conquer an otherwise insurmountable difficulty,



difficulty, it should be necessary to employ them, it may doubtless be done; taking care, however, to use such methods as will render the irregularities, occasioned by this disposition, the least striking and disagreeable. In the Tuscan or Ionic Orders no precautions are necessary; the Entablature in the former being entirely plain, and in the latter only enriched with Dentils, which admit of a regular distribution, in all Intervals that are divisible by thirds of Modules. But in the Corinthian and Composite it must be observed, that, if the Modillions are regularly disposed, and according to their just measures, they will not answer either in the large or little Intercolumniation, so as to have one of them over the middle of each Column. To remedy this defect the Architect of the Peristyle of the Louvre hath enlarged both the Modillions and the Spaces between them; the distance from one center to another, in the broad Intervals, being one Module thirteen Minutes, and in the narrow ones one Module fifteen Minutes. This method, though tolerable in that building, where the Dentil-Band is not cut, and the Angles are terminated by undiminished Pilasters, will not do in other cases: for, either the whole Cornice must be enlarged, and all it's proportions changed, or the Modillions will not fall regularly over the Dentils; the Coffers in the Soffit will be oblong instead of square; and the Space, between the last Modillion and that over the Angular Column, less by much than any of the others: all which are irregularities too great to be tolerated. The simplest and best manner of proceeding is to observe a regular distribution in the Entablature, without any alteration in it's measures, beginning at the two extremities of the building: by which means the Modillions will answer to the middle of every other Column, and be so near the middle of the intermediate ones, that the difference will not easily be perceivable. The only inconvenience arising from this practice is, that the three central Intercolumniations of the building will be broader, by one third of a Module, than is necessary for eleven Modillions: but this is a trifling difference, easily divided, and rendered imperceptible, in so great a length. In the Doric Order grouped Columns are not so easily managed; and, though they have been employed in many considerable buildings, and by eminent Architects, yet, in very few of them, have they been properly treated. At the Church of St. Gervais, and several other buildings in Paris, the Metope between the coupled Columns is much broader than any of the others; at the Minims near the Place Royale, that the Metope may be square, the Bases are confounded together; at the Palace of Vincennes, the Height of the Frize is considerably augmented for the same reason: and Scamozzi, wherever he joins together two Doric Columns, or Pilasters, omits the Base of one of them, substituting a Plinth in it's place; that so the Interval may not be too broad to admit of a regular Metope. None of these methods are good, nor equal to that of Palladio, which he hath practiced at the Palace of Count Chiericato, and in the Basilica of Vicenza. In the latter of these, every part whereof I measured, when at Vicenza, with great accuracy, the Interval between the coupled Columns is twenty one Minutes only: so that the distance, from the Axis of one Column to that of the other, is two Modules twenty one Minutes, or six Minutes more than is sufficient for a regular Metope and two half Triglyphs. In order to hide this excess, each of the Triglyphs is thirty one Minutes broad, their centers are each of them removed one Minute within the Axis of the Column, and the Metope is three Minutes broader than the others: a difference so trifling that it cannot be perceived without great difficulty. And if the Entablature is continued without any Break, the irregularity will be still less perceptible; because the two Metopes on each side of the large one will, each of them, by removing the Triglyph within the Axis, be augmented one Minute; so that the difference between them and the large one will only be two Minutes. When, therefore, grouping of Columns cannot be avoided in the Doric Order, the Attic Base of Palladio must be employed, on account of it's small projection; the great Interval must be Aræostyle, and the small

one twenty one Minutes, which leaves a space of one Minute between the Plinths of the Bases.

IN Peristyles and Galleries, or Porticos, all the Intercolumniations must be equal: but in a Loggia, or Porch, the middle Interval may be broader than the others, by a Triglyph, a Modillion, or three or four Dentils; unless the Columns at the Angles be coupled, or grouped with Pilasters; in which case all the other Intervals should be of the same dimensions: for, when they are of different breadths, as at the Sorbonne, and at the Collège Mazarin in Paris, the uniformity of the Composition is destroyed.

MR. BLONDEL observes, that, when Peristyles or Colonnades are composed of more than one row of Columns, as are those of the Piazza of St. Peter's at Rome, they should neither be of circular nor of polygonal figures, but continued, as much as possible, in straight lines: because, in either case, the regular disposition of the Columns is perceivable only from the center of the figure, the whole appearing from all other points a disagreeable heap of confusion. The remark is just; and I have frequently observed the bad effects of a circular disposition in the above-mentioned structure. The same inconveniency subsists with regard to engaged Pilasters, or half Columns, placed behind the detached Columns of circular or polygonal Peristyles; as may be seen in those of Burlington-House: wherefore, in buildings of that kind, it will be better to decorate the Back-Wall of the Peristyle only with Windows or Niches.

WHEN buildings are very small, as is frequently the case of Temples, and other inventions, used for the ornament of gardens, it will be necessary to make the Intercolumniations broader, in proportion to the diameter of the Columns, than usual; because, when they are nearer each other than three foot, there is not room for a bulky person to pass between them.

### *Of Arches.*

ARCHES are not so magnificent as Colonnades; but they are more solid, and less expensive. They are proper for Triumphal Entrances, Gates of Cities, of Palaces, of Gardens, and of Parks; for Porticos round publick Squares, Markets, or large Courts; and, in general, for all Openings that require an extraordinary breadth. In Bologna, and some other cities of Italy, the streets are on each side bordered with Arcades, like those of Covent-Garden and the Royal Exchange; which add greatly to their magnificence, and, in hot or rainy climates, are exceeding convenient for passengers, affording them shade and shelter; though, on the other hand, they are a great nuisance to the inhabitants, as they darken their apartments, hinder a free circulation of air, and serve to harbour idle and noisy persons; who crowd their entrances, and disturb their quiet. At Rome, the Courts of the Vatican, those of Monte Cavallo, of the Borgheze, and of many other Palaces, are likewise surrounded with Arcades, where the equipages and domestics attend under cover; some of them being sufficiently broad to admit two or three coaches abreast.

THERE are various manners of decorating Arches. Sometimes their Piers are rusticated; at others they are adorned with Pilasters, Columns, Terms, or Caryatides: and on some occasions they are made sufficiently broad to admit Niches, or Windows. The  
circular







circular Part of the Arch is either furrounded with rustic Key-stones, or with an Archivolt, enriched with Mouldings; which, in the middle, is sometimes interrupted by a Console, a Mask, or some other Ornament of sculpture, serving, at the same time, as a Key to the Arch, and as a Support to the Architrave of the Order. The Archivolt is sometimes supported by an Impost, at the head of the Pier; and at others, by Columns placed on each side of it, with a regular Entablature, or Architrave Cornice: and there are likewise instances of Arcades without Piers; the Arches being turned on single Columns, as in the Temple of Faunus at Rome, and the Royal Exchange in London; which, nevertheless, is a practice seldom to be imitated, as it is neither solid, nor handsome.

WHEN Arches are large, the Key-stone should never be omitted, but cut in the form of a Console, and carried close under the Soffit of the Architrave; which, by reason of its extraordinary length, requires a support in the middle. And if the Columns, that adorn the Piers, are detached, as in the Triumphal Arches at Rome, it is necessary to break the Entablature over them; making its projection in the Interval no greater than if there were no Columns at all: for, though the Architrave might be made sufficiently solid, yet it is disagreeable to see so great a length of Entablature hanging in the air, without any prop or apparent support. It is, however, to be remembered, that these Breaks in Entablatures are to be sparingly employed, never indeed but to avoid some considerable deformity: for they destroy, in a great measure, the simplicity of the Composition, and can seldom be effectuated without some mutilation, or striking irregularity in the Capitals and Cornices of the Orders, as may be observed in many parts of the inside of St. Paul's. The Imposts of Arches should never be omitted; at least, if they be, a Plat-Band ought to supply their place. If Columns are employed without Pedestals in Arcades, they should always be raised on a Plinth; which will keep them dry and clean, and likewise prevent their Bases from being broken. In all Arches it is to be observed, that the circular Part must not spring immediately from the Impost, but take its rise at such a distance above it, as is necessary in order to have the whole Curve seen at the proper point of view. When Archivolts are employed without a Key, or Console, in their middle, the same distance must be preserved between the Top of the Archivolt, and the Architrave of the Order, as when there is a Key; or, at least, half that distance: for, when they are close to each other, their junction forms an acute and disagreeable angle.

THE Void, or Aperture of Arches, should never be in height much more, nor much less, than double their breadth: the breadth of the Pier should seldom exceed two thirds, nor be less than one third of the breadth of the Arch, according to the character of the Order; and the Angular Piers ought to be broader than the others, by one half, one third, or a fourth. The Archivolt and Impost are to be proportioned to the Arch; due care being taken, however, to keep them subservient to the Cornice, the Architrave, and other principal Parts of the Order. For which reason the Impost should not be more than one seventh, nor need it ever be less than one ninth of the Aperture; and the Archivolt must not be more than one eighth, nor less than one tenth of it. The breadth of the Console, or Mask, which serves as a Key to the Arch, must at the bottom be equal to that of the Archivolt; and its sides must be drawn from the center of the Arch. The length of it ought not to be less than one and a half of its smallest breadth, nor more than double. The thickness of the Pier depends on the breadth of the Portico; for it must be strong enough to resist the pressure of its Vault. But, with regard to the beauty of the building, it should not be less than one quarter of the breadth of the Arch, nor more than one third: and when the Arches are closed up, to receive Doors, Windows, or

Niches, the recess should be deep enough, at least, to contain the most prominent parts of what is placed in them; otherwise the Architecture will appear flat, and the Cornice of the Nich, or Window, projecting before the Front of the Arch, will become too principal in the Composition; as we see it in the second Order of the Farnese at Rome. These dimensions are general: for a more accurate detail, the annexed Designs \* may be consulted; where the proper measures of every part are expressed in figures.

VIGNOLA, in all his Orders, excepting the Corinthian, makes the height of the Arch double its breadth: his Piers, when the Columns have no Pedestals, are always three Modules, and four, when they have Pedestals: his Imposts are all of them one Module, and the Archivolts are either one Module, or a half, as they belong to Arches with or without Pedestals. Palladio hath given Designs only of Arches with Pedestals. Their height is from one and two thirds to two and a half of their breadth; and his Piers are all of them nearly three Modules and three quarters; excepting in the Composite Order, where they are four and four fifths. Scamozzi's Tuscan Arch is, in height, somewhat less than double its breadth; which height encreases gradually, till, in the Corinthian Arch with Pedestals, it is nearly twice and one half the breadth. His Piers diminish in proportion to the encrease of delicacy in the Orders: his Tuscan Pier, in Arches without Pedestals, being four Modules and a half; and his Corinthian only three Modules and three quarters: and, in Arches with Pedestals, his Tuscan Pier is four Modules and two thirds; and his Corinthian only four Modules. His Imposts and Archivolts are likewise varied; and their proportions are relative to the breadth of the Arch, and to the height of the Pier: so that they are considerably larger in Arches with Pedestals than in those without.

VIGNOLA's Arches, being all of the same proportion, do not characterise the differences of the Orders. His Piers, in Arches without Pedestals, are too narrow, and his Archivolts too slight; in his Doric Arch without Pedestals, the distance between the Arch and the Architrave of the Order is too considerable; as indeed it is in several others of his Arches: and, in his Doric with Pedestals, the Piers are much too broad. Palladio makes too great a difference between the height of his Arches. His Tuscan and Doric are too low, and his Corinthian and Composite much too high. His Piers bear a greater proportion to the Void of the Arch, in the delicate Orders than in the massive. His Archivolts are slender, and his Imposts clumsy and ill profiled. The Apertures of Scamozzi's Arches are well proportioned; except in the Corinthian Order, where they are, like Palladio's, of an excessive height. His Piers bear a proper relation to the Arches; as do likewise his Imposts and Archivolts: though the two last of these, in regard to other Parts of the Composition, are, in his Arches with Pedestals, much too predominant; and the members, of which they are composed, are larger than those of the Cornice of the Order: a fault which Palladio hath likewise been guilty of, to a very great excess. At first sight, it appears extremely reasonable to augment the size of the Imposts and Archivolts of Arches, in proportion to the encrease of the Aperture; and, in cases where no Orders are employed, it ought always to be done: but when the Arches are, not only adorned with Imposts and Archivolts, but likewise surrounded with Pedestals, Columns, and Entablatures, it seems very improper to change considerably the proportions of any one of these Parts, while all the rest remain unaltered; since the consequence must be a disparity between them, so much the more striking, as they are near each other, and of similar natures; both these circumstances facilitating the comparison; while a trifling disproportion between the Aperture

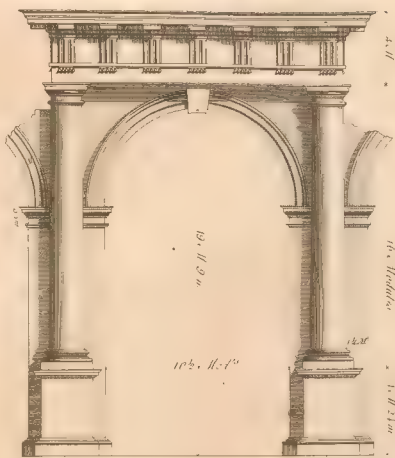
\* See first and second Plates of Arches.



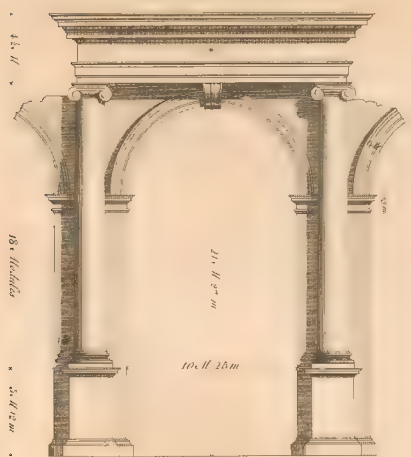
*Arches with Pedestals.*



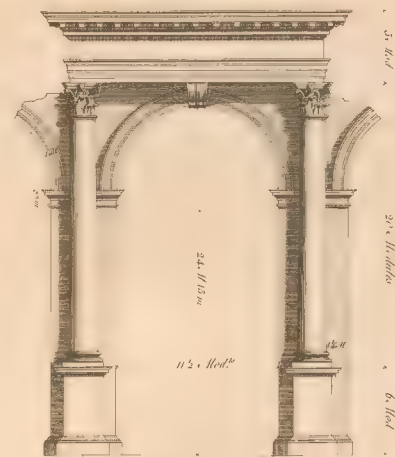
*Ionian*



*Doric*



*Ionic*



*Corinthian*



of the Arch, and its Impost, or Archivolt, will seldom be perceived, and never can be very disagreeable.

I have given Designs for Arches in all the Orders, wherein I have endeavoured to avoid the faults with which the above-mentioned Masters are charged. In my Arches without Pedestals, the height of the Arch is, in every Order, equal to the length of the Column; which height, in the Tuscan and Doric, is something less than double the breadth, and, in the Corinthian, something more than double: and, in those with Pedestals, nearly the same proportions between the height and the breadth of the Aperture are observed. The difference of breadth in the Arches, (supposing the Orders to be all of the same height), not being considerable, I have constantly observed the same dimensions, as well in the Piers, as in the Imposts and Archivolts; which is done to avoid a troublesome and needless detail; the characters of the different Orders being sufficiently preserved without it: for, though the Corinthian Pier contains the same number of Modules as the Tuscan, yet, as these Modules diminish in proportion to the increase of delicacy in the Orders, the real size of the one is to that of the other only as seven to ten.

In the Doric Order, the distribution of the Frize makes it difficult to proportion the Apertures of the Arches well, either with or without Pedestals: for the Intervals of three and four Triglyphs are too narrow, and those of four and five rather too broad. With regard to Arches without Pedestals, Palladio, to conquer this difficulty, hath, at the Carita in Venice, omitted the usual Ornaments of the Frize, and introduced, instead of them, an imitation of those on the Frize of the Sybill's Temple at Tivoli; having made the distance between the Axis of the Columns only eleven Modules and a half, instead of twelve and a half. Le Clerc, in his Designs of the Doric Order, hath diminished the breadth of the Metopes and Triglyphs; and Scamozzi hath made his Doric Columns seventeen Modules high, instead of sixteen, and raised them on Plinths; which method Sangallo hath likewise observed in the lower Order of the Farnese at Rome.

In imitation of Sangallo, I have, in the Doric Arch without Pedestals, raised the Columns on Plinths, but avoided augmenting their height; as I did not chuse to change the established proportions of the Order, where there appeared so little occasion for it. However, if the lowness of the Arch should be objected to, it may easily be remedied, either by increasing the height of the Column, as Palladio hath done in his Arch with Pedestals, or by diminishing the breadth of the Metopes and Triglyphs, according to le Clerc's method, or by employing both these artifices together; which last is to be preferred, as it will render the change in the proportions of each particular Part less considerable. The same expedients may be used in changing the measures of the Doric Arch with Pedestals, if they should not please; observing to divide the alteration proportionably between the Pedestal, the Column, and the Frize of the Order: by which means the height of the Aperture may be brought to double its breadth, without detriment to any other Part. For many things, which, in the strictness of Theory, may appear licentious, are in reality of no consequence in the execution, because they are not easily perceptible. The proportions of the Tuscan Arches may likewise be changed, if required, and the height of the Apertures be made nearer double their breadth; which, as there are neither Modillions nor Dentils in the Cornice, may be done without changing the proportion of any Part, of the Order.



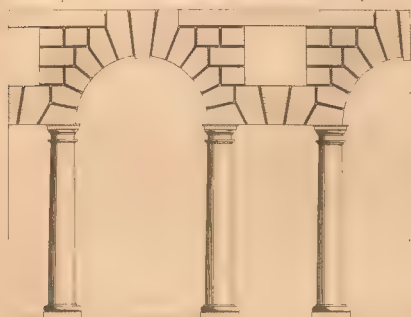
If the breadths, which I have given to the Piers of all the above-mentioned Arches, should, though they seem to me well proportioned, be thought too considerable, they may be diminished, and, in Arches without Pedestals, reduced to three Modules and three quarters, like those of Palladio; observing, in such case, to reduce the Archivolts to twenty six Minutes, instead of thirty, which they have in the annexed Designs. The Piers of Arches with Pedestals may likewise be lessened, and, instead of four Modules and a half, be only four; which may be done without changing the dimensions of the Archivolts: nor need the Imposts of any of the Arches be altered, though the Piers are.

WHEN Columns are engaged in the Piers, their projection depends on that of the Impost, whose most prominent part must be in a line with the Axis of the Column; at least in the Tuscan and Doric Orders; but in the Ionic, Composite, and Corinthian, it may project somewhat beyond the Axis, as in the Redentore at Venice, one of Palladio's best works: because, when the Columns in these Orders are disengaged much above the half of their diameter, it occasions very disagreeable mutilations in their Capitals; as may be seen in the Porch of St. George's Bloomsbury, and at the Banqueting-House.

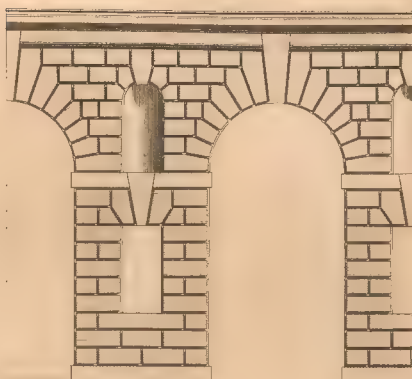
I have encreased the thickness of the Piers a quarter of a Module in each Order. Scamozzi's practice is quite opposite to this: for he diminishes his Piers in thickness, as well as in breadth, in the delicate Orders; by which means the real solidity of the structure is much affected; particularly, seeing the Columns, which may be considered as abutments, are a great deal weaker, in the Composite and Corinthian, than in the Tuscan or Doric Orders: whereas, according to the method here observed, the solidity of all the Piers is nearly the same; a circumstance doubtless of more consequence than any trifling disproportion between the thickness of the Pier, and the diameter of the Column, which can never be discovered without a very nice examination.

WITH regard to the interior Decoration of Arcades, the Portico may either have a flat Ceiling, or be arched in various manners. When the Ceiling is flat, there may be, on the backs of the Piers, Pilasters of the same kind and dimensions with the Columns in their Fronts; facing which there must be other Pilasters against the wall, whose projection, as well as that of those against the Piers, may be from one sixth to one quarter of their diameter; and these Pilasters may support a continued Entablature, or only an Architrave and Frize; the Cornice being interrupted over each Pilaster, and carried across the Portico; its Mouldings serving to form the compartments of the Ceiling; as in the Vestibule of the Massimi at Rome, and in the Great-Stable of the King's Mews, near Charing-Cross. When the Portico is arched, if the Vault be either semi-circular, or elliptical, the backs of the Piers and the wall may be decorated with Pilasters, as above described, and a regular continued Entablature; the Vault taking its rise from the top of the Cornice, or something higher; as in the Vestibule of St. John de Lateran at Rome: and it may be enriched with compartments of various regular figures, as hexagons, octagons, squares, &c. of which I have exhibited several examples among the Designs for Ceilings. But when it is Groined, or composed of Circular Coves with Pendentives, the Pilasters may be as broad as the Columns in Front of the Piers; but they must mount no higher than the top of the Impost, whose Mouldings must finish them; and from thence the Groins and Pendentives take their rise; as do likewise the Linings, or *Arcs Doubleaux*, that divide the Vault, whose breadth must be equal to the Pilaster from which they spring.

*Various Sorts of Arcades, taken from different  
Buildings at Rome, and in other parts of Italy.*



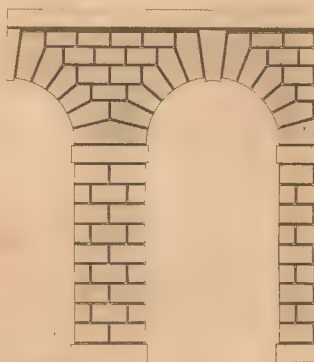
*Fig. 1.*



*Fig. 2.*



*Fig. 3.*



*Fig. 4.*



*Fig. 5.*



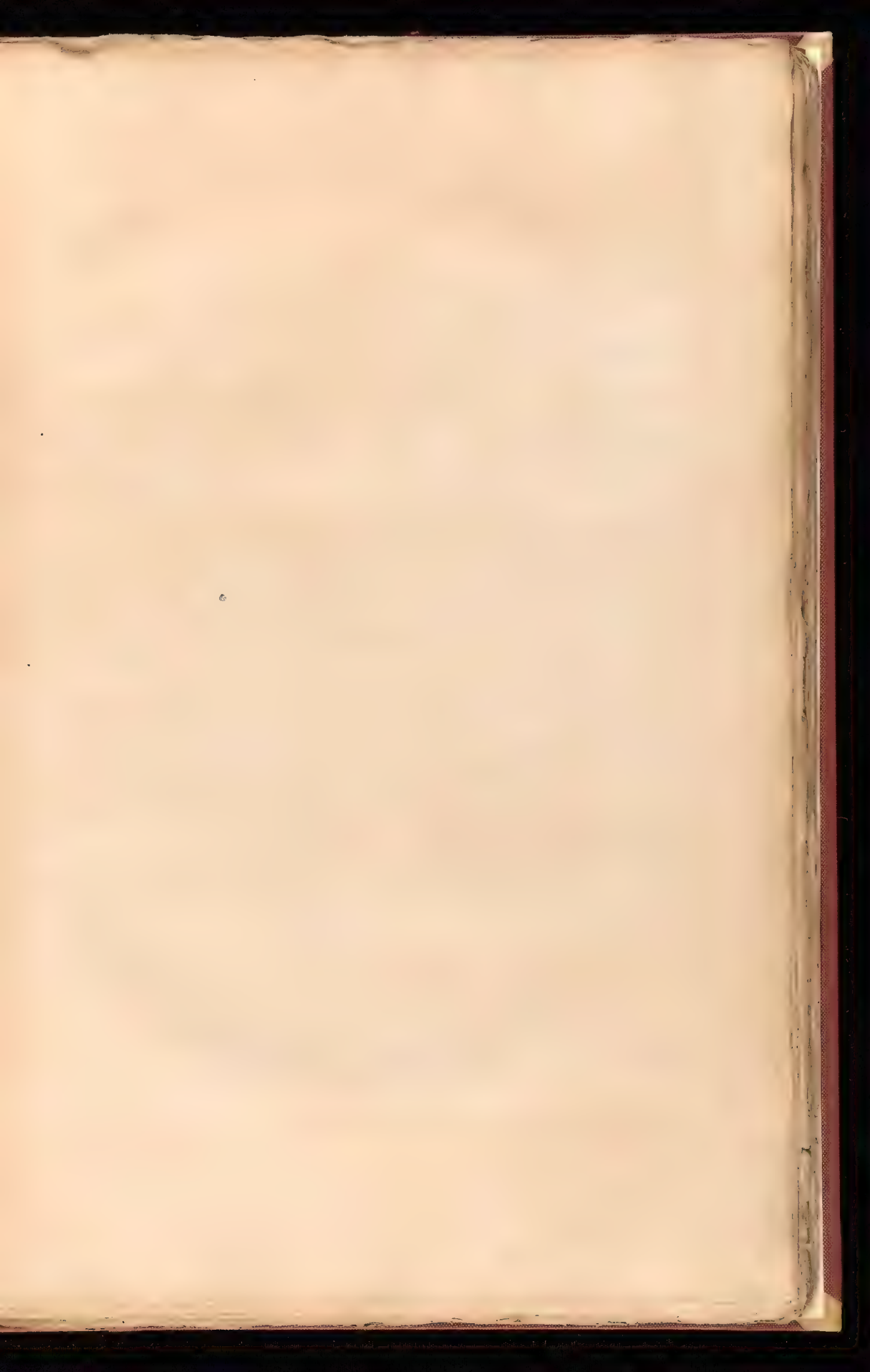
*Fig. 6.*

*A. Gordon delin.*

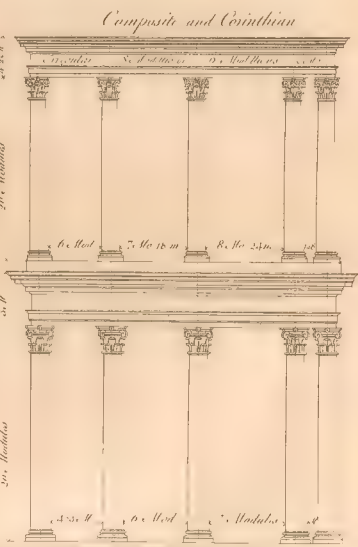
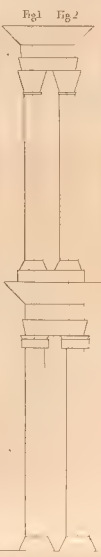
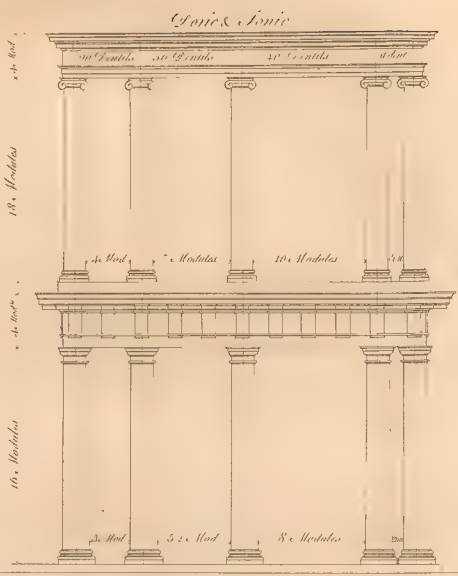
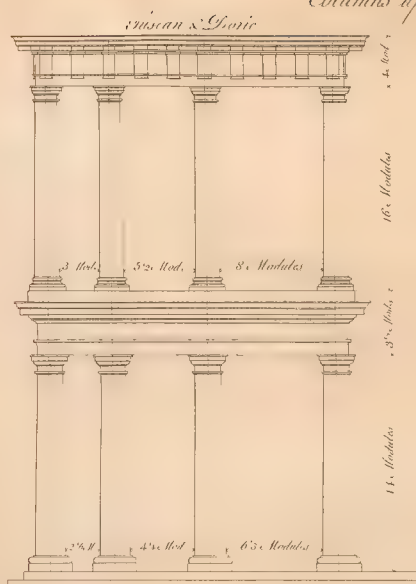
*J. P. Wilson sculp.*







# Columns upon Columns



IN the third Plate of Arches are six different Designs, all of them very perfect in their kind. Fig. 1 is the invention of Serlio; who recommends that manner of arching, where Columns are already provided, (as it frequently happens in places abounding with Antiquities,) whose length is not sufficient for the intended purpose: and he observes, that, where these Arches are used, it will be necessary to secure them with strong abutments at each end. The Aperture of the Arch may be from four to five diameters of the Column in breadth, and its height must be twice its breadth. The breadth of the small Interval must not exceed two thirds of that of the large one, and its height is determined by the height of the Column. Fig. 2 is Vignola's invention, and executed by him in the Cortile of the Palace of Caprarola. The Arches are, in height, somewhat more than twice their breadth; the distance from the Arch to the top of the Cornice is equal to one third of the height of the Arch; the breadth of the Pier is equal to the breadth of the Arch; and the Aperture of the window occupies nearly one third of that breadth. Fig. 3 is the invention of Bramante, and executed in the garden of the Belvedere at Rome. The height of the Arch is a trifle more than twice its breadth. The breadth of the Pier is equal to that of the Arch, and, being divided into twelve parts, two of them are for the two parts of the Pier that support the Archivolts, four for the two Columns, two for the Intervals between the Nich and Columns, and four for the Nich. The height of the Pedestal is half the diameter of the Arch. The Columns are ten diameters in height; and the height of the Entablature is one quarter of the height of the Columns. The Impost and Archivolt are, each of them, equal to half a diameter of the Column. Fig. 4 is very common in the works of Palladio and Inigo Jones. The height of the Arch may be about twice its breadth; and the breadth of the Pier from one to two thirds of the diameter of the Arch. Fig. 5 is a design of Vignola, executed at Monte Dragone, a seat of the Borgheze, near Freicati. The height of the Arch is something more than twice its breadth; and the breadth of the Pier, including the Columns that support the Arch, is a trifle less than the breadth of the Arch. Fig. 6 is an invention of Palladio, and executed by him in the Basilica at Vicenza. The most beautiful proportion for Compositions of this kind is, that the Aperture of the Arch be in height twice its breadth; that the breadth of the Pier do not exceed that of the Arch, nor be much less; that the little Order be in height two thirds of the large Columns, which height being divided into nine parts: eight of them must be for the height of the Column, and the ninth for the height of the Architrave-Cornice; two fifths of which may be for the Architrave, and three for the Cornice: the breadth of the Archivolt may be equal to the superiour diameter of the little Columns, and the Key-stone at its bottom must not exceed that breadth.

### Of *Orders above Orders.*

**W**HEN two or more Orders are employed, one above the other, in a building, the laws of solidity require, that the strongest should be placed lowermost: wherefore the Tuscan is to support the Doric, the Doric the Ionic, the Ionic the Composite, or Corinthian, and the Composite the Corinthian only.

THIS rule, however, is not always strictly adhered to. Most Authors place the Composite above the Corinthian; and we find it so disposed in many Modern Buildings. There are likewise examples, where the same Order is repeated; as at the Theatre of Statilius Taurus, and the Coliseum; and others where an intermediate Order is omitted, and the Ionic placed on the Tuscan, or the Corinthian on the Doric. But none of these practices



practices are to be imitated: for the first is an evident trespass against the rules of solidity; the second occasions an irksome uniformity; and the last cannot be effected without several disagreeable irregularities. For if the diameter of the superiour Order be in the same proportion to that of the inferiour, as if the succession were regular, the upper Order will be higher than the lower one; and if the diameter be lessened, in order to diminish the height, the Column will be too slender: the Intercolumniation, which at best is too wide, will be enlarged; and the Piers, if there are Arches, will be much too broad: besides which, the characters of the Orders will be too opposite, to be employed in the same aspect, without being connected by some preparatory decoration.

IN placing Columns above one another, it is always to be observed, that the Axis of all the Columns must correspond, and be in the same perpendicular line, in front at least: in Flank, indeed, they may or not be so, as shall be most convenient; yet it is most regular and solid to place them in a line in Flank likewise. In the Theatre of Marcellus, the Axis of the Ionic Column is almost a foot within that of the Doric one below it; which, as the Columns are engaged, and the wall of the second story is considerably contracted, could not well be avoided: and in cases of the like nature, where the solidity of the building is not affected by it, the same method may be taken; observing, however, never to make the retraction greater than at the Theatre of Marcellus, where the front of the Plinth, in the second Order, is in a line with the top of the Shaft in the first.

BUT where the Columns are detached, it will always be best to put them exactly over each other, that so the Axis of all of them may form one continued perpendicular line: for then the structure will be solid, which it cannot be, when the superiour Column is placed a good deal within the inferiour one; a great part of it having then no other support than the Entablature of the Order below it. It is indeed true, that, by so doing, the Bases of the upper Order will have a false bearing in front, as well as on the sides: but as there is no possibility of removing this inconveniency on the sides, it would be a matter of no consequence to remove it in front, where it is scarcely perceptible.

VITRUVIUS, in the first Chapter of his fifth Book, says, that the Columns in a second story should be less than those in a first by one quarter; for that the inferiour parts, being most loaded, ought to be strongest: and, in the seventh Chapter of the same Book, he repeats the same precept; adding, that, if a third Order be placed upon the second, its Column must likewise be less by one quarter than that of the second Order: so that, according to this rule, the height of the Column in the third Order will only be nine sixteenths of that in the first; and, if the Columns are placed on Pedestals, which, he says, are to be less by one half in a superiour than in an inferiour Order, the height of the Pedestal and Column, in the second Order, will be to their height in the first, as eleven to sixteen; and the height of the Pedestal and Column, in the third Order, will be to their height in the first, nearly as fifteen to thirty two: that is, less by more than one half, which is a disparity by no means to be allowed. Further, if three Orders of detached Columns be placed one above the other, as the Doric, Ionic, and Corinthian, and the lower Intercolumniation be Eustyle, or of two diameters and one third, the second Intercolumniation will be Araeostyle, or of four diameters; and the third will be nearly of six diameters and a half: a width of Intercolumniation extremely displeasing to the eye; at any rate unsolid; and, according to Vitruvius's own doctrine, not practicable, but where the Architraves are of wood. And if three Orders of engaged Columns be placed above each other, either alone, or on Pedestals, and if the lower Intercolumniation be of a proper breadth to admit a well proportioned

portioned Nich, Window, Door, or Arch, it will be exceeding difficult to decorate the second Intercolumniation, and absolutely impossible to decorate the third; which, though considerably broader than the first, will be only about half as high.

I will not trouble the reader with the various opinions and practices of Architects, with regard to the proportions of Orders placed above each other; the curious may consult Blondel's *Cours d'Architecture*, where the greatest part of them are enumerated, and their merits nicely weighed; the whole discussion being spun out to the extent of seventy Folio-Pages. It will be sufficient to observe, that Scamozzi's rule is universally esteemed the best; being simple, natural, and attended with fewer inconveniencies than any other. It is built upon a passage in the fifth Book of Vitruvius, and import that the lower diameter of the superiour Column should constantly be equal to the upper diameter of the inferiour one; as if all the Columns were formed of one long tapering tree, cut into several pieces.

ACCORDING to this rule, the Doric Column will be to the Tuscan as thirteen and one third to fourteen; the Ionic to the Doric as fifteen to sixteen; the Composite or Corinthian to the Ionic as sixteen and two thirds to eighteen; and the Corinthian to the Composite as sixteen and two thirds to twenty.

IN this progression it appears, that, when the Composite and Corinthian are employed together, the relations between them are more distant than between any of the other Orders. But this may be remedied by lessening the diminution of the inferiour Column, making its upper diameter six sevenths, or seven eighths, of the lower one, instead of five sixths; which will of course encrease the diameter and height of the superiour Column: though, indeed, the best expedient will be never to use these two Orders in the same aspect; for they are so much alike, that it differs little from repeating the same Order.

It will probably be objected, that the inferiour Orders, according to the above mentioned proportions, will not be sufficiently predominant. If both the Orders are continued throughout the Front, it is of no consequence; there are many examples, where the difference between them is not greater, that succeed perfectly well. And if the superiour Order only subsists in the middle; the Parts of the inferiour Order, extended on each side of it, are generally crowned with a Balustrade, levelling with the breasts of the windows in the second story; which is sufficient to give a proper degree of predominance to that Part of the Composition.

IN England there are few examples of more than two stories of Columns, in the same aspect: and though in Italy, and other parts of Europe, we frequently meet with three, and sometimes more; yet it is a practice by no means to be imitated: for there is no possibility of avoiding many striking inconsistencies, or of preserving the character of each Order in its intercolumnial decorations. Palladio hath attempted it at the Carita in Venice; Sangallo in the Farnese at Rome; Ammannati in the Cortile of the Pitti at Florence: but all unsuccessfully. It is even difficult to adjust two Orders with any tolerable degree of regularity, for the reasons already offered in the beginning of this Chapter; which will remain in force, even when Scamozzi's rule is observed, though the relations between the heights of the different Orders are then less distant than by any other method.

IN the first Plate of Orders above each other, I have given Designs of double Colonades in all the Orders; which are so disposed, that the Modillions, Mutules, Triglyphs, and

and other Ornaments of the Entablatures; fall regularly over the Axis of the Columns: except in the Composite and Corinthian combination, where, in the Eustyle Interval, the Modillions of the second Cornice do not answer. But the distance of the object, from the spectator's eye, makes this irregularity less important; more especially, as a Modillion will fall exactly over the Axis of every third Column. Nevertheless, if a scrupulous accuracy be required, the Entablature may be augmented, and made full five Modules high; by which means the distribution will be perfectly regular.

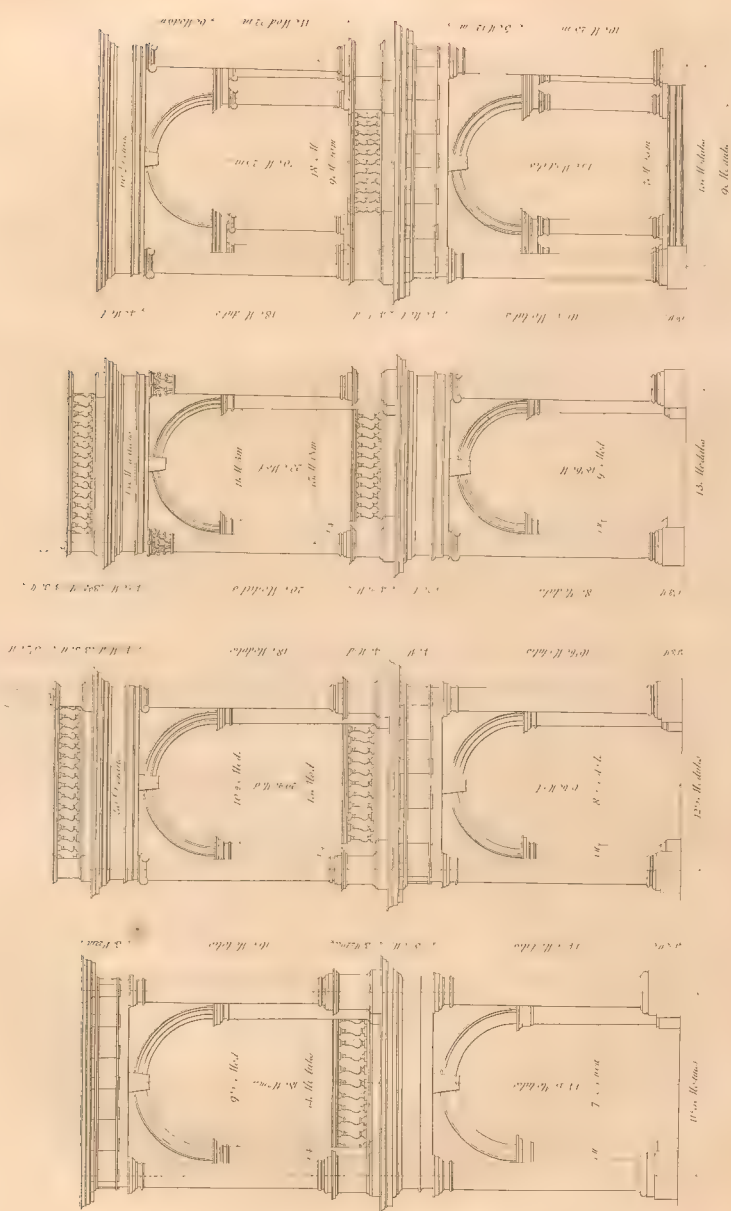
AMONG the Intercolumniations, exhibited in the above-mentioned Plate, there are some in the second Orders extremely wide; such as the Ionic Interval over the Doric Aræostyle, and the Composite and Corinthian Intervals over the Ionic and Composite Aræostyles: all which having a weak and meagre appearance, and not being sufficiently solid, except in small buildings, are seldom to be introduced. The most eligible are the Eustyle and Diastyle for the first Order; which produce nearly the Diastyle and Aræostyle in the second.

MANY Architects, among which number are Palladio and Scamozzi, place the second Order of Columns on a Pedestal. In two stories of Arcades this cannot be avoided; but in Colonnades it may and ought: for the addition of the Pedestal renders the upper Ordinance too predominant; and the projection of its Base is both disagreeable to the eye, and too great a load on the inferior Entablature. Palladio, in the Barbarano Palace at Vicenza, hath placed the Columns of the second story on a Plinth only: and this disposition is best; the height of the Plinth being regulated by the point of view, and sufficient to expose to sight the whole Base of the Column. In this case the Balustrade must be without Pedestals; the Rail, or Tablet, being fixed to the Shafts of the Columns, and the Base of the Balustrade made to level with their Bases; the upper Torus and Fillet being continued in the Interval, and serving as Mouldings to its Plinth, which is to occupy the remainder of the Space below them. The Rail and Balustres must not be clumsy: wherefore it is best to use double bellied Balustres, as Palladio hath done in most of his buildings, and to give the Rail very little projection, that so it may not advance too far upon the surface of the Column, and seem to cut into it. In large buildings, the middle of the Balustre may be in a line with the Axis of the Column: but in small ones, it must be within it, for the reason just mentioned. And it is to be observed, that, in these Balustrades, there are to be no half Balustres at the extremities; because they would alter the form of the Column.

THE height of the Balustrade is regulated, in a great measure, by its use; and therefore cannot well be lower than three foot. Nevertheless, it must bear some proportion to the rest of the Architecture, and have nearly the same relation to the lower Order, as a Balustrade placed on the top of it, chiefly for ornament, would have: wherefore, if the Parts are large, the height of the Balustrade must be augmented; and if they are small, it must be diminished, as I have done in the Casine at Wilton, where it is only two foot four inches high, which was the largest dimension that could possibly be given it, in so small a building: but that it might, notwithstanding its lowness, answer the intended purpose, the pavement of the Portico is six inches lower than the Bases of the Columns, and on a level with the bottom of the Plat-Band that crowns the Basement.

THE best, and indeed the only good, disposition, for two stories of Arcades, is to raise the inferior Order on a Plinth, and the superior one on a Pedestal, as  
Sangallo





11 ft. 6 in.



Sangallo hath done at the Farnese; making both the Ordonnances of an equal height, as Palladio hath done at the Basilica of Vicenza. In the second Plate of Orders above each other there are Designs for each Order, which are perfectly regular and well proportioned.

SCAMOZZI, in the thirteenth Chapter of his sixth Book, says, that the Arches in the second story should not only be lower, but also narrower, than those in the first; supporting his doctrine by several specious arguments, and by the practice of the Antient Architects, in sundry buildings mentioned by him; in most of which, however, the superiour Arches are so far from being narrower, that they are either equal to, or broader than the inferiour ones. In fact this is a very erroneous doctrine, against reason, and productive of several bad consequences. For if the upper Arches be narrower than the lower ones, the Piers will of course be broader; which is contrary to all rules of solidity whatever, and exceeding ugly to the sight. The extraordinary breadth of the Pier, on each side of the Column in the superiour Order, is likewise a great deformity: even when the Arches are of equal widths, it is much too considerable. Palladio hath, at the Carita in Venice, and at the Thieni Palace in Vicenza, made his upper Arches broader than the lower ones; and I have followed his example: by which means the weight of the solid in the superiour Order is somewhat diminished, and the fronts of the Piers bear a good proportion to their Columns.

THERE is no avoiding Pedestals in a second story of Arcades. Palladio hath indeed omitted them at the Carita: but his Arches there are very ill proportioned. The extraordinary bulk and projection of these Pedestals is, as before observed, a considerable defect: to remedy which, in some measure, they have been frequently employed without Bases; as in the Theatre of Marcellus, on the outside of the Palazzo Thieni, and the Chiericato in Vicenza. This, however, helps the matter but very little; and it will be better to make them always with Bases, whose projection must be as small as possible; observing likewise to reduce the projection of the Bases of the Columns to ten Minutes only, that the Dye may be no broader than is absolutely necessary. And care must be taken, never to break the Entablature over each Column in the inferiour Order; because the false bearing of the Pedestal, in the second Order, is by that means rendered far more striking, and in reality more faulty; having then no other support, but the projecting Mouldings of the inferiour Cornice. There is no occasion to raise the Pedestals of the second Order on a Plinth: for, as they come very forward on the Cornice of the first Order, and as the point of view must necessarily be distant, a very small part of their Bases will be hid.

THE Balustrade must level with the Pedestals, and its Rail and Base be of equal dimensions, and of the same Profiles with their Base and Cornice. It must be contained in the Arch, and set as far back as possible; that the form of the Arch may appear distinct, and uninterrupted from top to bottom: for which reason likewise the Cornice of the Pedestals must not profile upon the Piers, which are to be continued in straight lines, from the Imposts to the Bases of the Pedestals. The back of the Rail may be made plain; for so it will be most convenient to lean on, and in a line with the back of the Piers; or, if the interior part of the Arcade is much adorned, it may be a little within that line, and contained in the Arch, forming a Tablet surrounded with a Fillet and Oge. The back part of the Base of the Balustrade may be adorned with the same Mouldings, as the Bases of the Piers; providing they have not too much projection:



which if they have, it will be best to compose it only of a Plinth crowned with the two uppermost Mouldings, that so the approach may be free.

IN the Doric Arch above the Tuscan, I have reduced the Entablature to three Modules twenty two Minutes; which was necessary, in order to have the Arches well proportioned: and, as its bearing is very considerable, this licence is the more excusable. The parts bear the same proportion to each other as usual; the only difference being, that, instead of determining their measures by the Module of the Column, they must be regulated by another Module, equal to one quarter of the height of the Entablature. The Pedestals and Balustrade are in this, as in the other Arches, equal to the height of the Entablature; which was done to preserve the same general rule throughout: but, as the Entablature here bears a larger proportion to the Column than in the other Orders, the height of the Balustrade is rather too considerable, and may therefore be reduced to two ninths of the Column, as the others are; and what is deducted from its height, may be added to the height of the Column, which by that means will have a more elegant proportion. I have reduced the Ionic, Composite, and Corinthian Entablatures, in the second Orders, to two ninths of the height of their respective Columns; and, having allowed to each Dentil with its Interval a breadth of nine Minutes of the regular Module of the Column, the Dentils and Modillions answer exactly to almost all the Intercolumniations. In the Design of Arches supported by Columns, the little Order in the second story is a trifle lower than usual; which cannot be avoided: for, if it be made two thirds of the large Column, there will not be room above it for the circular Part of the Arch and the Archivolt.

### *Of Basements and Attics.*

INSTEAD of employing several Orders one above the other in a Composition, the Ground-Floor is sometimes made in the form of a Basement, on which the Order, that decorates the principal story, is placed. The proportion of these Basements is not fixed, but depends on the nature of the Rooms on the Ground-Floor. In Italy, where the Summer-Apartments are frequently on that Floor, they are sometimes very high. At the Palace of the Porti, in Vicenza, the height of the Basement is equal to that of the Order; and at the Thieni, in the same city, its height exceeds two thirds of that of the Order, which, nevertheless, is almost of a sufficient size to comprehend two stories: but at the Villa Capra, and at the Loco Arfieri, both near Vicenza, the Basement is only half the height of the Order; because in both of them the Ground-Floor consists of nothing, but Offices.

It will be needless to cite more examples of the diversity of proportions, observed by Architects in this part of a building; as the four above mentioned, all of them estimable works of the great Palladio, will sufficiently authorize any variations that it may be necessary to make. It will not, however, be adviseable ever to make the Basement higher than the Order it supports: for the Order being the richest part in the Composition, and indicating the principal part in the Fabric, ought to be predominant. Besides, when the grand Apartment is raised so high, it loses much of its merit; as the approach to it is rendered tedious and difficult. Neither should a Basement be lower than half the height of the Order, if it is to have Apartments, and consequently Windows, in it: for when that is the case, the Rooms will be low, and the Windows very ill proportioned. But,  
if

if the only use of the Basement be to raise the Ground-Floor, it need not be above three, four, or at most five foot high.

THE usual method of decorating a Basement is, with Rustics of different kinds. The best, in buildings where neatness and finishing is aimed at, are such as have a smooth surface. Their height, including the joint, should never be less than one Module of the Order placed upon the Basement, nor much more. Their figure may be from a triple square to a sesquialtera; and their joints may either be square or chamfered. The square ones should not be broader than one eighth of the height of the Rustic, nor narrower than one tenth; and their depth must be equal to their breadth: those that are chamfered must form a rectangle, and the breadth of the whole joint may be from one fourth to one third of the height of the flat surface of the Rustic. In France we frequently see only the horizontal joints of Rustics marked; the vertical ones being entirely omitted; and, in Sr. John Vanbrugh's works, the like is also very common: but it hath a bad effect, and makes the building look as if it were composed of planks, rather than of stones. Palladio's method is preferable, who, in imitation of the Antients, always marked both the perpendicular and the horizontal joints; and, when the former of these are regularly and artfully disposed, the Rustic work hath a very beautiful appearance. I have, in the course of this work, given various Designs of Rustic Basements\*, distributed in different manners, all of them collected from buildings of note.

THE Basement, when high, is sometimes finished with a Cornice, as in the second figure of the third Plate of Arches: but the usual method is only to crown it with a Plat-Band, as in the fourth figure of the same Plate; whose height should not exceed the height of a Rustic with its joint, nor ever be lower than the Rustic exclusive of the joint. The Zocholo, or Plinth at the foot of the Basement, may be of the same height with the Plat-Band, or a trifle higher; and when there are Arches, the Plat-Band, which supplies the place of the Impost, must be of the height of a Rustic, exclusive of the joint.

It is sometimes usual, instead of a second Order, to crown the first with an Attic story; as Palladio hath done at the Porti and Valmarana Palaces, in Vicenza, and Inigo Jones at Greenwich Hospital. These Attics should never exceed, in height, one third of the height of the Order, on which they are placed; nor be less than one quarter of it. Their figure is that of a Pedestal: the Base, Dye, and Cornice, of which they are composed, may bear the same proportions to each other as those of Pedestals do, and the Base and Cornice be composed of the same Mouldings as those of Pedestals are. Sometimes the Attic is continued throughout, without any breaks; at others it projects, and forms a Pilaster over each Column of the Order. The breadth of this Pilaster is seldom made narrower than the upper diameter of the Column below it, and never broader. Its projection may be equal to one quarter of its breadth. The fronts of these Pilasters are sometimes adorned with Pannels, let in and surrounded with Mouldings; as in the front of Powis-House: but this looks like joiner's work, and should therefore be avoided: neither should they be adorned with Capitals, as is always the custom in France; because they then approach too near the figure of regular Pilasters of the Orders, and being much broader, in proportion to their height, than the Pilasters of any of the Orders are, always carry with them the Idea of a clumsy ill proportioned Composition.

\* See Pl. 2. of Windows, and Pl. 3. of Arches.

*Of Pediments.*

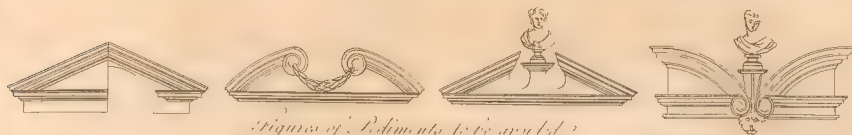
**P**EDIMENTS owe their origin, most probably, to the inclined Roofs of the primitive Huts. Among the Romans they were used only as Coverings to their Sacred Buildings; till Cæsar obtained leave to cover his house with a pointed Roof, after the manner of Temples. In the remains of Antiquity we meet with two kinds of them; viz. Triangular and Circular. The former of these are promiscuously applied to cover small or large bodies: but the latter, being of a heavier figure, are never employed but as Coverings to Doors, Niches, Windows, or Gates; where the smallness of their dimensions compensates for the clumsiness of their make.

As a Pediment represents the Roof, it should never be employed, but as a finishing to the whole Composition. In the Churches, at Rome and at Paris, we frequently see a Pediment used to finish the first Order of a Porch; another to finish the second Order; and sometimes a third above that: but this is a practice not to be imitated. Licinius, the Mathematician, formerly reprehended Apaturius, the Painter, merely for representing an absurdity of this kind in a Picture: for who, said he, ever saw Houses and Columns built upon the Roofs and upon the Tylings of other Houses? Besides, the inclined top of a Pediment is, in appearance, a very unstable Basement for a range of Columns, or other weighty bodies. Nor is it more reasonable to place two or three Pediments, one within another; as on one of the Pavillions in the Court of the Old Louvre at Paris, and at St. Mary's in Campitelli, and the Great Jesu at Rome; since the same Building can want but one Roof. On circular bodies Pediments should never be applied, as at St. Thomas's in the Louvre at Paris; that kind of Roof being of a very improper construction for covering them, and far from being pleasing to the eye; as, in such cases, they always appear contorted and irregular. Some writers object to Pediments in interior Decorations, where, the whole being covered and inclosed, there can be no occasion for coverings to shelter each particular part. But in this they seem to carry their reasoning rather too far; and a step further would lead them into the same road with Father Laugier; who, having sagaciously found out that the first buildings consisted of nothing but four stumps of trees and a covering, considers almost every part of Architecture, excepting the Column, the Entablature, and the Pediment, as licentious or faulty; and, in consequence, very cavalierly banishes at once all Pedestals, Pilasters, Niches, Arcades, Attics, Domes, &c. and it is only by special favour, that he tolerates Doors or Windows, or even Walls.

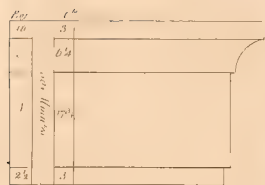
THERE are many favourers of this writer's system, who, like him, concentrate all perfection in Propriety. It were, indeed, to be wished that some invariable standard could be discovered, whereby to decide the merit of every production of Art: but, certainly, Father Laugier hath not, as yet, hit the right nail on the head, and therefore must give himself the trouble to think again. Beauty and Fitness are qualities that have very little connection with each other: in Architecture they are sometimes incompatible; as may be easily demonstrated from some of the Father's own Compositions; with a detail of which he hath favoured the world in his book. And there are many things in that Art, which, though beautiful in the highest degree, yet, in their application, carry with them an evident absurdity: one instance whereof is the Corinthian Capital; a form composed of a slight basket surrounded with leaves and flowers. Can any thing be more unfit to support a heavy load of Entablature, and such other weights as are usually placed upon it? Yet this hath been approved and admired for some thousands of years, and will still continue so to be, as long



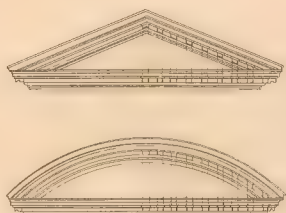
# *Pediments and Imposts*



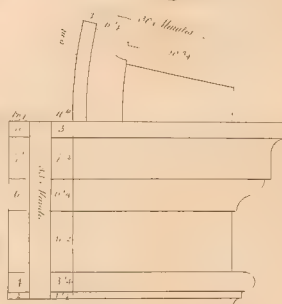
*Figures of Pediments to be avoided*



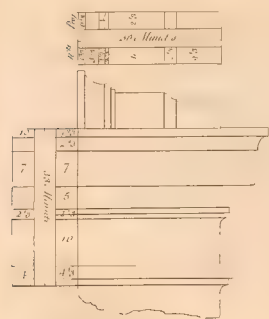
*Tuscan Impost*



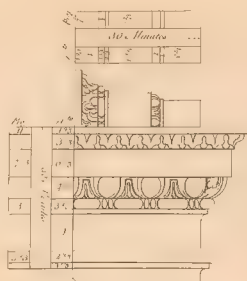
*Regular Pediments*



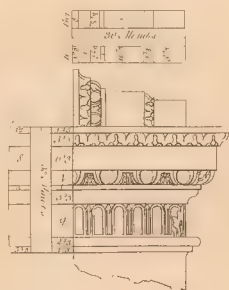
*Tuscan Impost with a curved top*



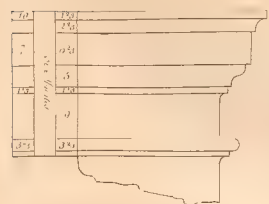
*Doric Impost*



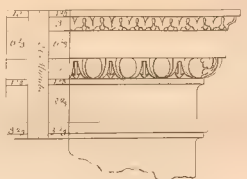
*Doric Impost with a decorative top*



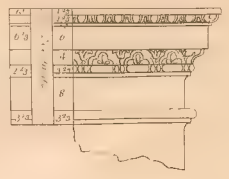
*Corinthian or Composite Impost*



*Doric Impost*



*Doric Impost with a decorative top*



*Corinthian or Composite Impost*



as men have eyes to see, and souls to feel. It is not, however, by any means, my intention entirely to lay aside a regard to Propriety: on all occasions it must be kept in view: in things intended for use, it is the primary consideration; and therefore should on no account whatever be trespassed upon, but in objects merely ornamental, which are designed to captivate the senses, rather than to satisfy the understanding. It seems unreasonable to sacrifice other qualities much more efficacious to Fitness alone.

THE Antients introduced but few Pediments into their buildings; usually contenting themselves with a single one, to distinguish and adorn the middle, or principal part: but the Moderns, and particularly the Italians, have some of them been so immoderately fond of them, that their buildings frequently consist of almost nothing else. At Rome the fronts of most of their Churches are covered with them; as are likewise many of their Palaces and private houses, where they are seen of all sizes and figures. For, besides the triangular and round, they have some composed of both these forms; some of an undulated figure; some semi-hexagonal; some with the inclined Cornice, and Tympan open in the middle, to receive a Vase, a Bust, a Nich with a Statue, or a Tablet for an Inscription; and others where the Aperture is left void, and the two ends of the inclined Cornice finished with a couple of Volutes, or Fleurons. There is likewise a sort of Pediment composed of two half Pediments, which are not joined together to form a whole one, but reversed; the summits being turned outwards. Of this kind there is one under the Porticos of the Gallery of Florence, with a Bust wedged in between the two Sections. England is far from being free of these extravagancies. The buildings of London furnish many examples of each kind, which, not to offend, I forbear pointing out.

THE Girder being a necessary part in the Construction of a Roof, it is an impropriety to intermit the horizontal Entablature of a Pediment, by which it is represented, to make room for a Nich, as at St. John's, Westminster; or for an Arch, as in the Cathedral of St. Paul's; or for a Window, as is the custom in most of the new buildings in this city; where a semi-circular Window is generally introduced, between the inclined Cornice of the Pediment and the Door, to light the Hall or Passage: and this licence is so much the more reprehensible, as it is extremely ugly; the two parts of the inclined Cornice thus untied and unsupported, always striking the spectator with the idea of a couple of leavers applied to overturn the Columns on each side. The making several breaks in the horizontal Entablature, or Cornice, of a Pediment, as at the King's Mews, and on the Pediments in the Flanks of St. Paul's, is an impropriety of the same nature, and full as disagreeable to the eye.

VITRUVIUS observes, that the Greeks never employed either Modillions, or Dentils, in the horizontal Cornices of their Pediments; both of them representing parts in the construction of a Roof, which cannot possibly appear in that view. There is an Antique instance of this practice in the Temple of Scifi, mentioned by Palladio, and a Modern one in the front of the Feuillants, near the Thuilleries at Paris, built by one of the Mansards. This is extremely Proper, and at the same time extremely ugly. The disparity of figure and enrichment, between the horizontal and inclined Cornices, are defects by no means to be compensated by any degree of Propriety whatever: and therefore to me it appears best, in imitation of the greatest Roman and Modern Architects, always to make the two Cornices of the same Profile; committing a trifling impropriety to avoid a considerable deformity.

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IN regular Architecture, no other form of Pediments can be admitted, besides the triangular and round. Both of them are beautiful: and when a considerable number of Pediments are introduced, as when a range of Windows are adorned with them, these two figures may be alternately employed; as in the Niches of the Pantheon, and in those of the Temple of Diana at Nimes. It is to be observed, that the two uppermost Mouldings of the Cornice are always omitted in the horizontal one of a Pediment; and, that part of the Profile directed upwards, to finish the inclined Cornice, this difference of direction encreases the height of the Cyma very considerably, and makes it far too clumsy for the other Parts of the Entablature: to obviate which, some Architects have made a break in the Cyma and Fillet, as in the fourth figure, Pl. of Pediments. But this produces a considerable deformity: and therefore it will be better, when the whole building is covered with the Pediment, to make the Profile of the Cyma lower than usual; by which means it may, notwithstanding the encrease occasioned by the difference of its direction, be made of a size suitable to the rest of the Cornice. But, if the inclined Cornice of the Pediment be, on each side, joined to a horizontal one, as is the case when the middle Pavillion is flanked with buildings, the only good method of lessening the above mentioned deformity, is to give very little projection to the Cyma; by which means the encrease in its height may be rendered very trifling. The Modillions, Mutules, Dentils, and other Ornaments of the inclined Cornice, must answer perpendicularly over those in the horizontal Cornice, and their sides be perpendicular to the Horizon.

THE Antients always avoided introducing Pediments of different sizes in the same Composition. In the chaste remains of Antiquity I do not recollect any example of two different sizes in the same aspect. Neither do we find that they ever adorned their Niches, Doors, or Windows with Pediments, when the whole front, or any considerable part of it, was covered with one; justly judging that the immense disparity, between the principal Pediment, and those that should cover the Parts, could not but produce a disagreeable effect; in the same manner as a Pigmy and a Giant being exposed to view at the same time, would both be made ridiculous by the contrast.

THESE cautious proceedings of the Antient Artists are good lessons to the Moderns, which they would do well to carry in their memories, in all sorts of Compositions. For, wherever there is a considerable difference of dimension, in objects of the same figure, both will equally suffer by it: the largest will appear insupportably heavy, and the smallest ridiculously trifling: and where the difference is small, it will always strike as the effect of inaccuracy in the workmen; as is the case with the Arches in the Basement of the Horse-Guards in St. James's Park. Besides, this sort of variety betrays such a poverty of imagination, that an Artist sacrifices all claim to Genius in employing it; as a Poet would do, who should attempt to please by describing the same kind of object ten times over, varying his description only by saying that the second was not above half as big as the first, and the third less than either of them, &c.

THE proportion of Pediments depends upon their size: for the same proportions will not do in all cases. When the Base of the Pediment is short, its height must be encreased; and when it is long, it must be diminished. For, if a small Pediment be made low, the inclined Cornice, which is always of the same height, whatever be the dimensions of the Pediment, will leave little or no space for the Tympan: and if a large one be high, it will appear heavy. The best proportion for the height is from one fifth to one quarter of the Base, according to the extent of the Pediment, and the character of the



# Ballusters &c.

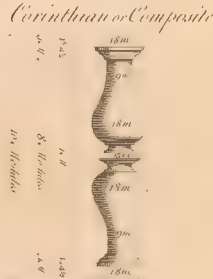
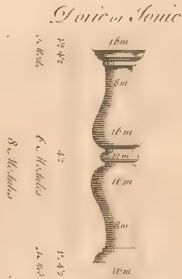
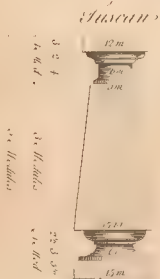
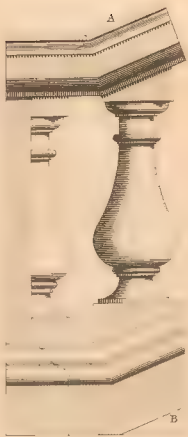
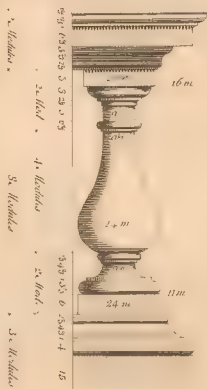
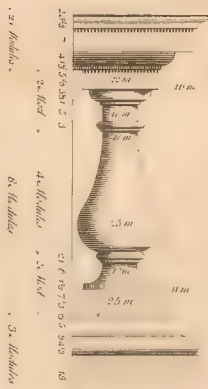
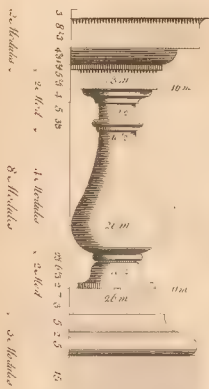
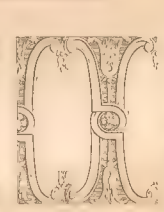
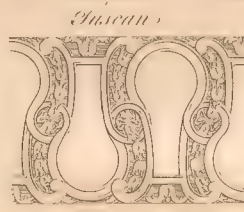
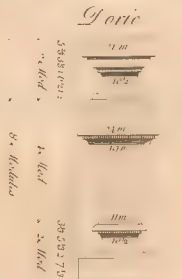
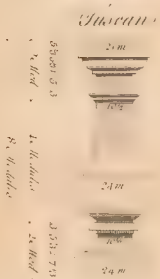


FIG. I.





the body it covers. The materials of the Roof must also be attended to: for, if it be covered with tiles, it will be necessary to raise it more than one quarter of the Base; as was the custom of the Antients in their Tuscan Temples.

THE Tympan is always on a line with the front of the Frize; and, when large, may be adorned with sculptures, as at the Mansion-House, representing Arms, Cyphers, Trophies; or Subjects either allegorical or historical, according to the nature of the building. But when small, it is much better to leave it plain. Vitruvius determines the height of the Acroters, or Acroterions, by the height of the Tympan; and Scamozzi by the projection of the Cornice, giving to the Dye as much height as the Cornice hath projection. Neither of these methods are well founded. When the building is terminated by a Balustrade, the Pedestals of the Balustrade serve for the side Acroters; and that at the summit must be suited to them. But when there is no Balustrade, the Acroters must be of a sufficient height, to expose to view the whole Statue, or Vase, placed upon them, from the proper point of sight for the building.

## Of Balustrades.

**B**ALUSTRADES are sometimes of real use in buildings, and at other times they are merely ornamental. Such as are intended for Use, as when they are employed in Stair-cases, before Windows, to enclose Terrasses, &c. must always be, nearly, of the same height; never exceeding three foot and a half, nor ever less than three: that so a person of an ordinary size may, with ease, lean over them, without being, at the same time, in danger of falling. But those that are principally designed for Ornament, as when they finish a building, should be proportioned to the Architecture they accompany; and their height ought never to exceed four fifths of the height of the Entablature, on which they are placed; nor should it ever be less than two thirds thereof, without counting the Zocholo, or Plinth; the height of which must be sufficient to leave the whole Balustrade exposed to view, from the point of sight for the building. Palladio hath, in some of his works, made the height of the Balustrade equal to that of the whole Entablature; and Inigo Jones hath followed his example in many of his buildings; particularly at the Banqueting-House: where, besides this extraordinary loftiness, it is raised on a very high Plinth. I do not think either of these great Artists are to be imitated in this practice, as it renders the Balustrade much too predominant.

THERE are various figures of Balusters; the most regular of which are delineated in the annexed Plate. The handsomest are the three in the first row: their profiles and dimensions are all different: the simplest of them may serve to finish a Tuscan Order; and the others may be employed in the Doric, Ionic, Composite, or Corinthian Orders, according to their degrees of richness. The best proportion, for Balustrades of this kind, is to divide the whole given height into thirteen equal parts; and to make the height of the Baluster eight of those parts, the height of the Base three, and that of the Cornice, or Rail, two: or into fourteen, (if it be required, to make the Baluster less,) giving eight parts to the Baluster, four to the Base, and two to the Rail. One of these parts may be called a Module; and, being divided into nine Minutes, may serve to determine the dimensions of the particular Members, as in the annexed Designs.

THE other Designs of Balusters, exhibited in the same Plate, are likewise very perfect in their kinds, and collected from the works of Palladio, and other great masters. The double-bellied ones are the lightest, and therefore properest to accompany Windows, or other Compositions, whose parts are small, and whose profiles are delicate. The Base and Rail of these Balusters may be of the same profile as for the single-bellied ones; but they must not be quite so large. Two ninths of the Baluster will be a proper height for the Rail, and three for the Base. The proportions of the Balusters may easily be gathered from the Designs, where they are marked in figures: the whole height of each being divided into such a number of parts, as is most convenient for the distribution of the inferior divisions; one of which parts is the Module divided into nine Minutes.

IN Balustrades, the distance between two Balusters should not exceed half the diameter of the Baluster, measured in its thickest part; nor be less than one third of it. The Pedestals, that support the Rail, should be at a reasonable distance from each other: if they be too frequent, the Balustrade will have a heavy look; and if they be far asunder, it will be weak. The most eligible distance between them is, when room is left, in each Interval, for eight or nine whole Balusters, besides the two half ones engaged in the Flanks of the Pedestals. But as the disposition of the Pedestals depends on the situation of the Piers, Pilasters, or Columns in the front, it being customary to place a Pedestal directly over the middle of each of these, it frequently happens that the Intervals are sufficient to contain sixteen or eighteen Balusters. In this case each range may be divided into two, by placing a Dye in the middle, flanked with two half Balusters. The breadth of this Dye may be from one half to two thirds of the breadth of a Pedestal; and it will be best to continue the Rail and Base in a straight line, without any Break round it: frequent Breaks, of any kind, being defective; and most so when they are of different dimensions; because they then render the confusion greater.

THE breadth of the Pedestals, when they are placed on Columns, or Pilasters, is regulated by them; the Dye never being made broader than the top of the Shaft, nor much narrower: and when there are neither Columns, nor Pilasters, in the front, the Dye should not be much lower than a square, and seldom higher.

ON Stairs, or any other inclined Planes, the same proportions are to be observed as on horizontal ones. It is sometimes customary to make the Mouldings of the Balusters follow the inclination of the Plane: but this is difficult to execute, and not very handsome when done; so that it will be better to keep them horizontal, and make the Abacus and Plinth in form of wedges, as in figure 1, Pl. of Balusters: making their height, at the Axis of the Baluster, the same as usual. The distance between two Balusters, on inclined Planes, must not be quite so much as when they are in a horizontal situation; because the thickest parts do not then come on the same level. Le Clerc thinks it best to finish the inclined Balustrades of Stairs, or Steps, with horizontal Pedestals, placed on the floor, or pavement, to which they descend. The method of joining the horizontal Mouldings of these to the inclined ones of the Rail and Base of the Balustrade, is expressed in figure 1 of the annexed Plate.

As the intention of Balustrades is properly to enclose Terraces, and other heights where men resort, in order to prevent accidents, it is an impropriety, as d'Aviler observes, to place them on the inclined Cornices of Pediments; (as at S<sup>ra</sup> Susanna and S<sup>ra</sup> Maria della Vittoria, near Dioclesian's Baths at Rome;) or in any other places, where it is not apparently





*Designs for Gates & Piers.*



*W. & A. 1800*

*W. & A. 1800*

rently practicable, at least, for men to walk. When Balustrades are used in interior Decorations, as on Stairs, to enclose Altars, Thrones, Tribunals, Alcoves, Buffets in public Assembly-Rooms, &c. or when, in Gardens, they enclose Basins of Water, Fountains, or any other Decoration, the figures of the Balusters may be varied, and enriched with Ornaments proper to the place they adorn.

If Statues are placed upon a Balustrade, their height should not exceed one quarter of the Column and Entablature, on which the Balustrade stands. Their Attitude must be upright; or, if any thing, bending a trifle forwards: but never inclined to either side. Their legs must be close to each other; and the drapery close to their bodies: for when they stand straddling, with their bodies tortured into half a dozen bends, and their draperies waving in the wind, as on the Colonnades of St. Peter's, they have a most disagreeable effect; especially at a distance: from whence they appear like lumps of unformed materials, ready to drop upon the heads of passengers. Three figures placed on the Pediment of Mr. Spencer's house, which are executed by the ingenious Mr. Spang, are well composed for the purpose. The height of Vases placed upon Balustrades should not exceed two thirds of the height of Statues.

It is sometimes customary, in interior Decorations, to employ, instead of Balusters, certain Ornaments, called *Fretts*, or *Guillochis*. I have, in the Plate of Balusters, given some Designs of them, for the use of those who shall incline to employ them. But it will be advisable to do it sparingly: for representing Leaves, Ribands, and Flowers, they do not carry with them an idea of strength; and therefore are not fit for a Fence.

### Of Gates, Doors, and Piers.

THERE are two kinds of Entrances; *Doors* and *Gates*. The former serve only for the Passage of Persons on foot: but the latter are likewise contrived to admit Horsemen and Carriages. Doors are used as Entrances to Churches, and other public Buildings, to common Dwelling-Houses, and Apartments: and Gates serve for Inlets to Cities, Fortresses, Parks, Gardens, Palaces, and all Places where there is a frequent Resort of Coaches. The Apertures of Gates being always wide, they are generally made in the form of an Arch; that figure being the strongest: but Doors, which are usually of small dimensions, are commonly of a parallelogram figure, and closed horizontally. The Antients sometimes made their Doors, and even Windows, narrower at the top than at the bottom. In the Temple of Vesta, at Tivoli, there are examples of both. But this oddity hath been very little practised by the Modern Artists. Scamozzi disapproves of it: so do several other writers: and it is a matter of surprize, that a person of so refined a taste, as the late Earl of Burlington, should have introduced a couple of these ill-formed Doors in the Cortile of Burlington-House.

THE general proportion for the Apertures, both of Gates and Doors, whether arched or square, is that the height be about double the breadth. It is probable that necessity first gave birth to this proportion, which habitude confirmed and rendered absolute. In the primitive huts, the entries were doubtless small; perhaps no larger than was just sufficient for a man to creep through. For those rude buildings being intended merely as retreats for the inhabitants at night, or in bad weather, it is natural to suppose they made them as close as possible. But when Architecture improved, and methods were discovered of shutting the

Door occasionally, they made it of such a size as was necessary for giving admittance to a tall bulky man, without stooping, or turning aside: that is, they made it about three foot wide, and six foot high; or twice as high as broad: which proportion, being become habitual, was preferred to any other; and observed even when the size of the entrance was considerably augmented, and other proportions would have been equally convenient.

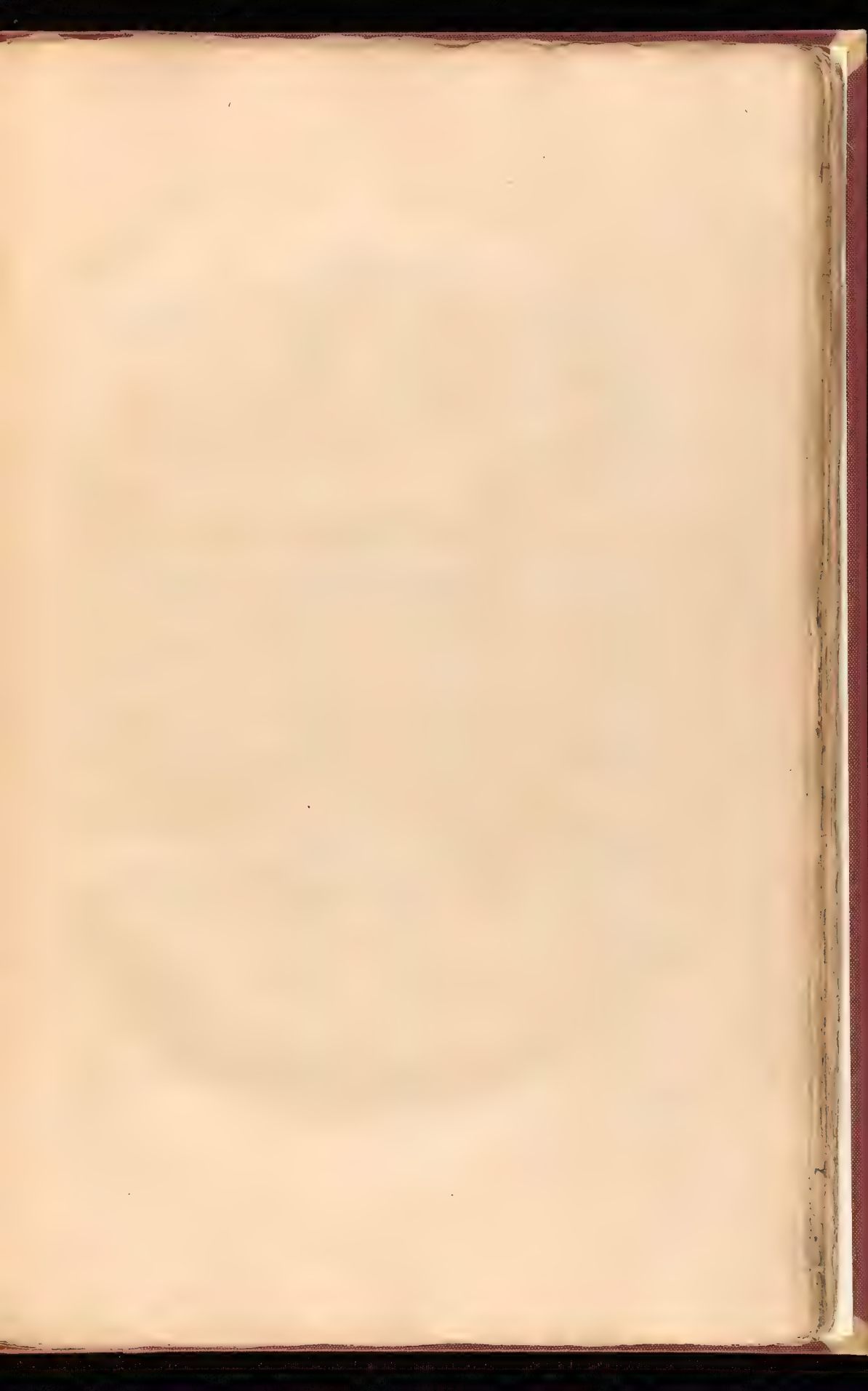
WE may look for the origin of many proportions in Architecture in the same source; particularly with relation to objects of real use: and the pleasure or dislike, excited in us at their sight, must, I believe, be ascribed either to prejudice, or to our habit of connecting other ideas with these figures, rather than to any particular charm inherent in them, as some people are apt to imagine. Thus, with regard to elevations, if the breadth be predominant, we are struck with the ideas of majesty and strength; and, if the height predominates, with those of elegance and delicacy: all which occasion pleasing sensations. An excess of the former degenerates into the heavy; and an excess of the latter into the meagre: either of which are equally disgusting. When objects are low, and much extended, we naturally conceive an idea of something mean, abject, and unwieldy: and when they are extremely elevated and narrow, they seem fragile and unstable. Perfect proportion consists in a Medium between these Extremes: which Medium the rules of Architecture tend to fix.

SOMETIMES too the aptitude of a figure to the purpose it was intended for endears it to us: and what at first only gained our approbation, in time commands our love; as we see men become enamoured of a woman's person, whose mind was at first the only attractive power. But this last is not a general rule; and seldom or ever can happen, either when there is any thing disagreeable in the figure, or any thing remarkably defective or deformed in the person.

THE usual Ornaments of Gates consist of Columns, Pilasters, Entablatures, Pediments, Rustics of different sorts, Imposts, Archivolts, &c: and the most common method of adorning Doors is with an Architrave, surrounding the sides and top of the Aperture; on which are placed a regular Frize and Cornice. Sometimes too the Cornice is supported by a couple of Consoles, placed one on each side of the Door; and sometimes, besides an Architrave, the Aperture is adorned with Columns, Pilasters, Caryatides, or Terms, and a regular Entablature with a Pediment. In the two annexed Plates I have given various Designs both of Gates and Doors.

FIGURE 1. in the Plate of Doors is a Rustic Door, composed by the celebrated Vignola; in which the Aperture occupies two thirds of the whole height, and one half of the whole breadth; the figure thereof being a double square. The Rustics may be either smooth or hatched: their joints must form a rectangle, and each joint may be, in breadth, one third, or two sevenths, of the vertical surface of a Rustic: the joints of the *Claveaux*, or Key-stones, must be drawn to the summit of an equilateral Triangle, whose Base is the top of the Aperture. The Architrave surrounding the Aperture may be composed either of a large Oge and Fillet, or of a Plat-Band and Fillet: its whole breadth must be one tenth of the breadth of the Aperture; the remaining part of each Pier being for the Rustics. The Entablature is Tuscan: the Cornice is to be one fifteenth of the whole height of the Door; and what remains below it, being divided into twenty one equal parts, the two uppermost of them will be for the Frize and Architrave, and the remaining nineteen for the Rustics and Plinth at the foot of the Door. Fig. 2. is another very beautiful composition of the same great Master, executed by him at the Palace of Caprarola in the Ecclesiastical State, and





*Designs for Doors.*



*W. Chambers del.*

*Benning*

and copied by Inigo Jones in the Hospital at Greenwich: a circumstance which pleads strongly in its favour. The Aperture is in the form of an Arch, and occupies somewhat more than two thirds of the whole height. It is adorned with two rusticated Doric Pilasters, and a regular Entablature: the height of the Pilasters is sixteen Modules; and that of the Entablature four: the breadth of the Aperture is seven Modules; its height is fourteen Modules; and the breadth of each Pier is three Modules. Fig. 3. is likewise a Design of Vignola's. It is of the Corinthian Order, and executed in the Cancellaria at Rome. The height is equal to double its breadth; and the whole Ornament at the top is equal to one third of the height of the Aperture. The Architrave is in breadth one fifth of the breadth of the Aperture; and the Pilasters, that support the Consoles, are half as broad as the Architrave. The whole is well imagined, but rather heavy; and it will be best to reduce the Architrave to one sixth of the Aperture, diminishing the whole Entablature proportionably: but the Pilasters may remain of the breadth they now are, which is not too great. Fig. 4. is a Disposition of Michael Angelo's. The Windows of the Capitol are of this kind; and Sr. Christopher Wren hath executed Doors of this sort, under the beautiful semi-circular Porches in the Flanks of St. Paul's. The figure of the Aperture may be a double square; the Architrave one sixth of the breadth of the Aperture; and the whole Entablature one quarter of its height. The front of the Pilasters or Columns, on each side, must be on a line with the lower Fascia of the Architrave; and their breadth must be a semi-diameter. Fig. 5. is imitated from a Design of Philibert de l'Orme. It may serve either for a Gate or Outside-Door: observing, in the former of these cases, to raise the Columns on Plinths; and, in the latter, on some steps, as all Outside-Doors ought to be, both because the lower apartments should not be on a level with the ground, and because this elevation will shew the Door, or indeed any other Composition, to more advantage. The Aperture may be, in height, twice its breadth. The Piers must be a little more than half the breadth of the Aperture; and the Columns must occupy half that breadth: their height may be eight diameters, or somewhat more; and the Architrave and Cornice must bear the usual proportion to the Columns: the Frize is omitted: the Archivolt is in breadth a semi-diameter of the Column; and its whole extent being divided into thirteen equal parts, there will be room for seven *Claveaux*, and six Intervals; and the Shafts of the Columns, from the top of the Impost downwards, being divided into eight equal parts, there will be room for four Intervals, and for rustic Cinctures; whereof that which levels with the Imposts may be square, as in de l'Orme's Design; the rest of them being made cylindrical. Fig. 6. is a Door in the Salon of the Farnese at Rome, designed by Vignola. The Aperture forms a double square: the Entablature is equal to three elevenths of its height, the Architrave being one of these elevenths; and the whole Ornament on the sides, consisting of the Architrave and Pilasters, is equal to two sevenths of the breadth of the Aperture: the Cornice is composite, enriched with Mutules and Dentils; and the Frize is adorned with a Festoon of Laurel. Fig. 7. is copied from a Door at Florence; said to be a Design of Cigoli's. The height of the Aperture is a trifle more than twice its breadth. It is arched; and the Impost is equal to half a diameter. The Columns are Ionic, somewhat above nine diameters high; and their Shafts are garnished, each with five rustic Cinctures. The Entablature is less than one quarter of the Column; and the breadth of the Tablet, in which there is an Inscription, is equal to the breadth of the Aperture.

Fig. 8. is a Composition of Inigo Jones. The Aperture may be a double square. The Architraves may be from one sixth to one seventh of the breadth of the Aperture; and the top of it must level with the upper part of the Astragal of the Columns. The Columns are Corinthian, their height is ten diameter, and they must be at a sufficient distance, from the Architrave, to leave room for the Bases.



THE Entablature may be two ninths, or one fifth, of the Columns, according to the character of the Building in which the Door is employed; and the height of the Pediment may be one quarter of its Base. Fig. 9, is a Design of Serlio's. The Aperture may be either twice as high as broad, or a trifle less. The diameter of the Columns may be equal to one quarter of the breadth of the Aperture; and their height may be from eight diameters, to eight and a half. The Entablature must be somewhat less than one quarter of the height of the Columns; and the height of the Pediment may be one quarter of its Base.

FROM these Designs and Descriptions the manner of composing Doors may easily be gathered: and every man may invent a variety of other Designs, suitable to the occasions in which they shall be wanted. Yet such as are not endued with the talent of Invention, will do well to copy these; which are all very excellent in their kind: and for more variety they may recur to the Designs of Windows contained in this work, which will, most of them, answer equally well for Doors.

IN the plate of Gates and Piers, Fig. 1. is a Pier of my Composition. Its diameter may be one quarter of its height, exclusive of the Plinth and Vase; and the height of both these may be equal to one diameter of the Pier, or a trifle less. The Rustics may either be plain, hatched, or vermiculated: the height of each course may be one eleventh part of the height of the Pier, counting to the top of the Entablature; the Entablature two elevenths; and the Base of the Pier one eleventh part. Figure 2. is likewise a Composition of mine, imitated from M. Angelo Buonaroti's Design for Cardinal Sermonetti. The height of the Aperture is somewhat more than twice its breadth; which breadth occupies one third of the breadth of the whole Composition. The Order is Composite; and the height of the Entablature is equal to one quarter of the height of the Column. I have made a Break in it over each Column: but, unless the Column project considerably, it will be as well to carry the Entablature on in a straight line. The Dimensions of the particular parts may be measured on the Design. Fig. 3. is a Pier of my Composition, executed at Goodwood, the Seat of his Grace the Duke of Richmond, in Suffex. The Diameter is one quarter of the height, exclusive of the finishing, which is equal to one Diameter; and the height of the Pier, from the top of the Entablature downwards, being divided into eleven and a half parts, one of these parts is given to the Base, one to each Rustic, and one and a half to the Astragal, Frize, and Cornice. Fig. 4. is a Composition of the late Earl of Burlington's, that great Architect and Patron of the fine Arts, which is executed at Chiswick, and at Bedford-House in Bloomsbury-Square with some little difference. Fig. 5. is an Invention of mine, and fig. 6. is one of Inigo Jones's; of which kind he hath executed a couple of Piers at Aimsbury in Wiltshire, the Seat of his Grace the Duke of Queensbury. Among the Designs at the end of this work, there are various other compositions for Gates; and any of the Arches, either with or without Pedestals, of which I have given Designs in treating of Arcades, may be employed as Gates likewise: observing however, where the Piers are weak, to fortify them, and make them at least equal to half the breadth of the Aperture.

THE first consideration, both in Gates and Doors, is the size of the Aperture; in the Dimensions of which regard must be had to the size of the bodies that are to pass through it. For this reason inside Doors, however small the building may be in which they are employed, should never be narrower than two foot nine inches: nor need they ever, in private houses, exceed three foot six inches in breadth, which is more than

than sufficient to admit the bulkiest person: and their height should at the very least be six foot three or four inches; otherwise a tall man cannot pass without stooping. Also Doors of entrance, to private houses, should not be less than three foot six inches broad, nor more than six foot. In Churches, Palaces, and other public Structures, where there is a constant ingress and egress of people, and frequently great crowds, the Apertures must be larger; and their breadth, in the Apartments, cannot be less than four and a half, five and a half, or six foot; as outside doors, must at least, be six feet wide, and at most ten or twelve. The smallest breadth that can be given to the Aperture of a Gate is  $8\frac{1}{2}$  or 9 foot; which is but just sufficient for the passage of a Coach: but if Carts likewise are to pass, it must not be narrower than 10 or 11 feet, and city Gates, and other entrances where carriages are liable to meet, should not be narrower than 18 or 20 foot. The same breadths must likewise be observed in the Intervals between Piers, which are to answer the same purposes as Gates. In settling the dimensions of the Apertures, regard must likewise be had to the Architecture, with which the Door is surrounded. If it be placed in the Intercolumniation of an Order, the height of the Aperture should never exceed three quarters of the space between the Pavement and the Architrave of the Order; otherwise there cannot be room for the Ornaments of the Door: nor should it ever be much less than two thirds of that space; for then there will be room to introduce both an Entablature and a Pediment, without crowding; whereas if it be less, it will appear trifling, and the Intercolumniation will not be sufficiently filled. The Apertures of Doors, placed in Arches, are regulated by the Imposts; the top of the Cornice being generally made to level with the top of the Impost. And when Doors are placed in the same line with Windows, the top of the Aperture must level with the tops of the Apertures of the Windows; or if that be not practicable, without making the Door much larger than is necessary, the Aperture may be lower than those of the Windows, and the tops of all the Cornices made on the same level.

WITH regard to the situation of the principal Entrance, Palladio observes that it should be so placed, as to allow an easy communication with every part of the building. Scamozzi compares it to the mouth of an Animal; and, as nature hath placed the one in the middle of the face, so the Architect ought to place the other in the middle of the front of the Edifice; that being the most noble, the most majestic, and the most convenient situation. In several of the Palaces at Rome, as those of the Pamfilia in the Corso, and of the Brachiano at the Santi Apostoli, there are two principal Entrances in the same aspect: but this ought to be avoided; as it leaves strangers in doubt where to seek for the State-Apartments, which should always be contiguous to the principal Entrance. In interior dispositions, the Doors of communication must be situated, as much as possible, in a line; the advantages of which are, that the Decoration is by that means regular, the passage through the Apartments is easy, and, in Summer, when the Doors are left open, the air circulates freely. It likewise gives a much grander appearance to the Apartments, by exposing to view at once the whole series of rooms; which is more particularly striking, when the Apartments are illuminated, as on occasion of Balls, Routs, or other rejoicings. There should, if possible, be a Window at each end of the building, directly facing the line of the Doors of communication; that so the view may be less limited, and take in, at once, not only the whole series of rooms, but likewise part of the gardens, or other prospects that surround the building: and, when this is not practicable, it will do well to place Mirrors at each end of the Apartment, or to counterfeit Doors, and fill them with Safes and squares of looking Glass, (as is the custom in France;) which



which by reflection multiply the Rooms, the Doors, and other objects, making an Apartment in itself small, appear very considerable.

THE Door of Entrance from the Hall, Vestibule, or Antichamber, either to the principal Apartment, or to any of the inferior ones, should be in the middle of the room, if possible, and facing a Window: those that lead to Galleries, or any other long rooms, should be in the middle of one of the ends: and, in general, all Entrances should be so contrived, as to offer to view, at the first glance, the most magnificent, and the most extensive prospect of the place they open into. The Doors of communication, from one room to another, of the same Apartment, must be at least two foot distant from the front walls; that the Tables placed against the Piers, between the Windows, or other pieces of furniture, may not stand in the way of those that pass. In bed-rooms, care must be taken to make no Doors on the sides of the bed; unless it be to communicate with a water-closet, wardrobe, or other conveniency of that kind; as well on account of the draught of air, as of the noise attending their opening and shutting; both of which are troublesome, and on some occasions dangerous. Neither ought Doors to be placed near Chimneys; as the opening them will disturb those who sit by the fire, and the draught of air, through the crevices of the Door, be apt to give them colds. In our northern climates, the fewer Doors a room hath, the better it will be to inhabit: for as we have much more cold weather than hot, it is necessary to make the rooms as close as possible; otherwise they are not habitable for the greatest part of the year. Wherefore it will be advisable never to make more Doors than are absolutely necessary; and the feigning of Doors, to correspond with the real ones, may likewise be omitted, on many occasions. In England the real and feigned Doors of a room, with their Ornaments, frequently cover so great a part of the walls, that there is no place left for any other furniture: and I have seen a Salon, large enough to receive a company of fifty or sixty persons, furnished with six or eight Chairs, and a couple of Tables.

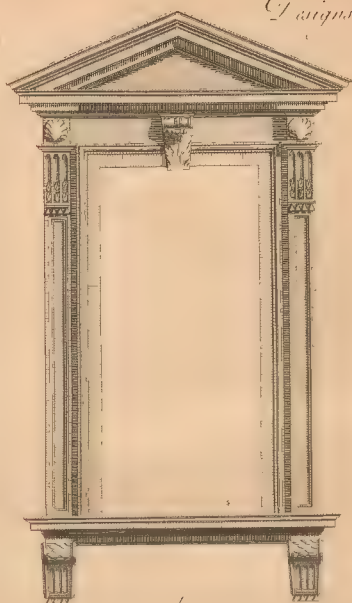
In composing Doors, regard must be had, both in their size and their enrichments, to the place they lead to. Those that give entrance to Palaces, Churches, State-Apartments, &c. must be large, and profusely enriched: but such as conduct to humbler habitations may be small, unless the nature of the building shall require otherwise. And sparingly ornamented, if several Doors are in the same aspect, as in the inside of a Hall, &c. they should all be of the same size and figure: or if there be many, the principal ones, provided they stand in the middle of the rooms, may be larger, of a different form, and more adorned than the rest: but more than two sorts always breed confusion. Gates must, in their composition, be characterized according to the nature of the place they open to; and by their dimensions, give some idea of its extent and importance. Gates of Cities or of Fortresses, should have an appearance of Strength and Majesty; their parts should be large, few in number, and of a bold relief. The same ought likewise to be observed in Gates of Parks, or Gardens; and it will be better to compose all these of Rustic work, and of the massive Orders, then to enrich them with Ornaments, and delicate Profiles. But Triumphal Arches, Entrances to Palaces, Magnificent Villas, &c. may be composed of the more delicate Orders, and adorned in the highest degree.

THE Gates of Parks and Gardens are commonly shut with an Iron Grate; and those of Palaces should likewise be so, or else left entirely open all day, as they are both in Italy and France: for the Grandeur of the Building, together with the Domestics, Horses, and Carriages, with which the Courts are frequently filled, would give a magnificent idea of the

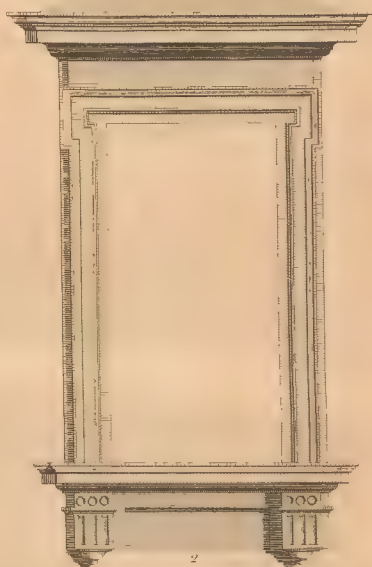




*Designs for Windows -*



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*W. Chambers*

*J. Sutton sculp*

the Patron, and serve to enliven a City. In London, many of our Noblemen's Palaces, towards the street, look like Convents: nothing appears but a high Wall, with one or two large Gates, in which there is a hole for those who chuse to go in or out to creep through: if a coach arrives, the whole Gate is opened indeed; but this is an operation that requires time, and the Porter is very careful to shut it again immediately, for reasons to him very weighty. Few in this vast city suspect, I believe, that, behind an old brick wall in Piccadilly, there is one of the finest pieces of Architecture in Europe: and I could mention many very decent, and some even magnificent buildings, that were never seen by any body, but the friends of the families they belong to, and by some few inquisitive people, who are curious enough to peep into every out of the way place.

THE Antients frequently covered the closures of their Doors with Plates, and Basso Relievos, of Bronze. There are some examples yet remaining of this practice, both at the Panthæon, and at St. John de Lateran; the Doors of which last building formerly belonged to the Temple of Saturn. The Doors of St. Peter's of the Vatican are likewise covered with Bronze; and at Florence those of the Baptistry, fronting the Cathedral, adorned with a great number of figures by Lorenzo Ghiberti, are much esteemed.

BUT the extraordinary expence and weight of these Doors have occasioned their being laid aside; and wood alone is now used. The commonest sort are made of Deal, painted in various manners; and the better kind of them are of Wainscot, Mahogany, or different sorts of precious woods inlaid. With regard to their construction, Mr. Ware observes that Strength, Beauty, and Straitness are to be considered; all which purposes are answered by composing them of several Pannels. The number of these must depend on the size of the Door; which should likewise regulate the thickness both of the Pannels and the Framing. If the Doors be adorned with Ornaments of Sculpture, as is sometimes usual in very rich buildings, it must be kept very flat, both for the sake of lightness, and to prevent its being broken. The Pannels may be surrounded with one or two little enriched Mouldings, contained in the thickness of the Framing, and not projecting beyond it, (as is sometimes seen in old buildings,) which, as well as the Ornaments, may be gilt.

Doors, that exceed three foot and a half in breadth, are generally composed of two Flaps; by which means each part is lighter, and when open doth not project so far into the room. It is to be observed that all Doors must open inwards; otherwise in opening the Door to let a person in, you may chance to knock him down.

*Of Windows.*

THE first consideration, with regard to Windows, is their size; which depends on the Climate, and the Extent of the rooms they are to light. In hot Countries, where the Sun is seldom clouded, and where its rays dart more directly upon the earth, the light is more intense than in colder Climates; and therefore the Apertures may be less: and, in small buildings, where the Apartments, generally speaking, are likewise small, there is no necessity for having Windows of the same size as in large ones, the rooms of which, being commonly spacious and high, require a considerable quantity of light. Palladio observes that the Windows should not be broader than one quarter of the breadth of the room, nor narrower than one fifth of it; and that their

N n

height



height should be twice and one sixth of their breadth. But, as in one house there are large, middling, and small rooms, and all the Windows on one floor must nevertheless be of one size, he prefers those rooms of which the length exceeds the breadth in the ratio of 5 to 3, for determining the dimensions of the Windows. Thus, when the breadth of the room is eighteen foot, and the length thirty, he divides the breadth into four and a half parts, giving one of these parts to the breadth of each Window, and two and one sixth of them to the height; making the Windows of the other rooms of the same size.

IN England, the Windows of the smallest private house are, commonly, from three to three and a half foot broad; and being twice their breadth in height, or somewhat more in the principal Apartments, they generally mount to within a foot or two of the Ceilings of the rooms, which are sometimes no higher than ten foot, and at most twelve or thirteen: but, in more considerable houses, the Apartments are from fifteen to twenty foot high, or sometimes more; and in these the Windows are from four to five, and five and a half foot broad, and high in proportion. These dimensions are sufficient for dwelling houses of any size in this Country: when they are larger they admit too much of the cold air in winter: but Churches, and other buildings of that kind, may have much larger Windows, and proportioned to the Architecture of which these Structures are composed, the parts of which are generally very large.

WITH regard to the beauty of exterior Decorations, if an Order comprehends two stories, the Apertures of the Windows with which it is accompanied should not much exceed three Modules in breadth; but when it contains only one story, their breadth may be four and a half, or even five Modules. Windows contained in Arches may have from two fifths to three sevenths of the Arch in breadth, and their height must be such that the last horizontal Moulding of their Cornice may answer to the top of the Impost of the Arch: the whole Pediment being contained in the circular part, the Pediment must be triangular; for two Curves above each other, unless they be parallel, do not look well.

THE proportions of the Apertures of Windows depend upon their situation. Their breadth in all the stories must be the same; but the different heights of the Apartments make it necessary to vary the height of the Windows likewise. In the principal floor it may be from two and one eighth of the breadth, to two and one third, according as the rooms have more or less elevation. In the ground story, where the Apartments are lower, the Apertures of the Windows seldom exceed a double square; and, when they are in a Rustic Basement, they are frequently made much lower. The Windows of the second floor may be, in height, from one and a half of their breadth, to one and four fifths; and those of Attics, and Mezzanines, either a perfect square, or somewhat lower. The character of the Order in which the Windows are employed, and that of the Profiles with which they are enriched, must likewise in some measure be consulted and the Apertures made more or less elevated as the Order or the Ornaments of the Window are more or less delicate.

THE Windows of the principal floor are generally most enriched. The simplest method of adorning them is, with an Architrave surrounding the Aperture, and crowned with a Frize and Cornice: but, when the Aperture is remarkably high with respect to its breadth, it is necessary to spread the Ornaments on the sides of it, to give the whole composition an agreeable proportion. The Windows of the ground floor are sometimes left entirely plain without any Ornament; and at other times they are surrounded with Rustics,



*Designs for Windows.*

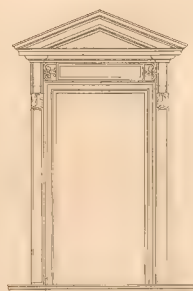


Fig. 1

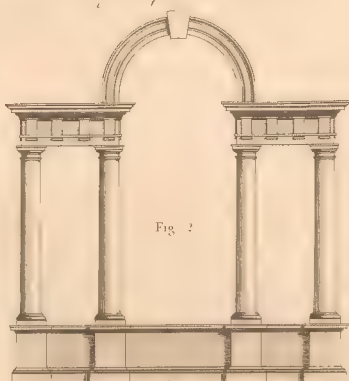


Fig. 2



Fig. 3

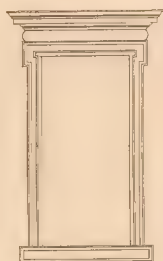


Fig. 4

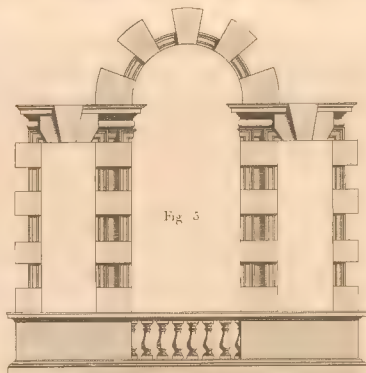


Fig. 5

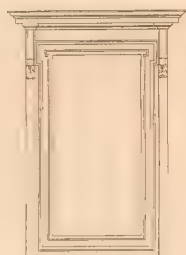


Fig. 6



Fig. 7



Fig. 8

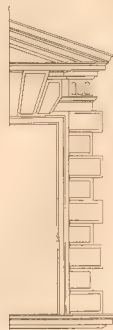


Fig. 9



tics, or a regular Architrave, with a Frize and Cornice. Those of the second floor have generally an Architrave, carried entirely round the Aperture; and the same is the method of adorning Attic and Mezzanin Windows: but these two last have seldom or ever either Frize or Cornice; whereas the second floor Windows are often crowned with both.

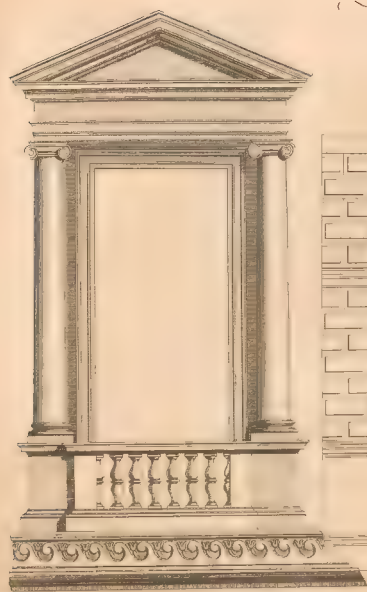
In the three annexed plates of Windows, I have given a great variety of Designs. Fig. 1. in the first of these plates is imitated from the lower Windows of St. Peter's, composed by M. Angelo Buonaroti. The Aperture is somewhat more than a double square in height: the Architrave is one seventh of the breadth of the Aperture; which is likewise the breadth of the Pilasters: the Consoles, both at the bottom and top of the Window, are, in length, one third of the breadth of the Aperture; and the whole Entablature is equal to one quarter of its height. Fig. 2. is a design of Bartolomeo Amanato, executed in the ground floor of the Mattei Palace at Rome. The lower part of it is well composed. But the whole is rather clumsy; and a Pediment would have done better than the slope at top. Fig. 3. and 4. are both of them composed by Bernardo Buontalenti, and executed in different Palaces at Florence. The Apertures of this sort of Windows may be a double square, or a trifle more; the Architrave from one sixth to one seventh of the breadth of the Aperture; the Pilasters equal to that breadth, when the Architrave is narrow; or less by one quarter, or by one fifth, when it is broad: the whole Entablature should not exceed one quarter of the height of the Aperture, nor be much lower: the Consoles may be equal in length to half the breadth of the Aperture at most, and to one third of it at least.

In the second plate Fig. 1. is a Design of P. Lescot, abbot of Clagny, executed in the Old Louvre at Paris. The proportions may be the same as in the two last mentioned ones. Fig. 2. is what we commonly call, in England, a Venetian Window. It is an invention of Scamozzi's. The height of the arched Aperture is twice and one half its breadth: those on the sides are half the breadth of that in the middle, and their height is regulated by the height of the Columns: the breadth of the Archivolt is equal to the superiour diameter of the Columns. Fig. 3. is a Design of Andrea Palladio's, executed by him in many of his buildings. The Aperture is a double square: the breadth of the Architrave is one sixth of the breadth of the Aperture; and the Frize and Cornice together are double the height of the Architrave: the breadth of the Consoles is two thirds of the breadth of the Architrave. Fig. 4. is likewise a Design of Palladio's, executed at the Chiericato in Vicenza. Its proportions differ very little from the former: the Plat-band that supports the Window is equal to the breadth of the Architrave. Fig. 5. is a Venetian window, invented, I believe, by Mr. Campbell. Fig. 6. is a Design of Inigo Jones's, executed at the Banqueting-House. I do not know exactly what proportions he hath observed, having never had an opportunity to measure the original: but the Aperture may be a double square; the Architrave may be one sixth of its breadth; the whole Entablature one quarter of its height; and the breadth of the Consoles two thirds of the breadth of the Architrave. Fig. 7. is a Design of M. Angelo Buonaroti, executed at the Farnese, with some difference. For the beautiful disposition represented in fig. 8. we are indebted to the late Mr. Kent; and it is executed with some little difference at the Horse-Guards, in St. James's Park. Its proportions may be collected from the Design. Fig. 9. is a Design of Ludovico Da Cigoli, and executed in the ground-floor of the Ranuncini Palace at Florence. In the third plate of Windows, fig. 1. is imitated from a Design of Raphael Sanzio da Urbino, executed in the principal floor of the Pandolfini Palace at Florence. The height of the Aperture is a trifle more than twice its breadth: the Architrave is equal to one seventh

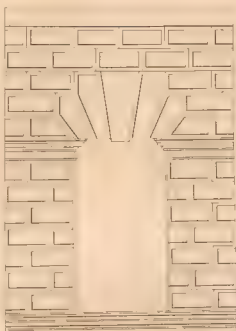
seventh of the breadth of the Aperture: the Columns are Ionic, and will succeed best if they are entirely detached: yet that cannot well be, except on a ground floor: their height is nine diameters; their distance from the Architrave of the Window is a quarter of a diameter; which is likewise the distance of the Entablature from the top of the same Architrave. The height of the whole Entablature is equal to two ninths of the Column; and the height of the Pediment is one quarter of its Base, or a trifle less: the Pedestals and Balustrades are in height one quarter of the Column and Entablature taken together. Fig. 2. is an Invention of Andrea Palladio's, executed with some difference in the Porto-Barbarano Palace at Vicenza. Inigo Jones hath very judiciously introduced the same Design in the flanks of Greenwich Hospital, and managed all the parts of it far more gracefully than in the original. Fig. 3. is imitated from the Windows in the principal floor of the Bracciano Palace at Rome, designed by Cavaliero Lorenzo Bernini. Fig. 4. is an Invention of Palladio's, and the Design here given is very accurately measured and copied from the Thieni Palace at Vicenza; in the principal floor of which it is executed. The height of the Aperture is two and one tenth of its breadth: the Columns are Ionic, one quarter engaged in the Wall, and nine diameters high: the bottoms of the Capital are on a line with the top of the Aperture; they have angular Volutæ, and an Astragal and Fillet below the Volutæ: the Bases are Tuscan: there are five Dyes on the Shaft of each Column, which are all of an equal breadth; the inner sides of them are on a line with the sides of the Aperture; and their projection is equal to that of the Plinth of the Base, which is one fifth of a diameter of the Column: the Key-Stones are distributed in the manner represented in the Design; they encline forwards towards the top; their surface is rough, and hatched irregularly with long chops, as are likewise the Dyes on the Columns, their Angles alone being left smooth; which roughness is an agreeable opposition to the smooth finishing of the other parts. The Entablature is Ionic; the Architrave composed of two Fascias only; the Frize swelled, and the Dentil-band placed immediately on the Frize, without any Ogee to support it; a particularity which Palladio hath repeated in others of his Designs, though it hath but an indifferent effect. The Pedestals and Balustrade are a trifle higher than one third of the Columns: the Dyes and Balusters are placed immediately on the Plat-band that finishes the Basement; which is not so well as if there had been a Base: but it hath been done to diminish the projection. This Window is beautiful, different from the Design given of it in Palladio's Book, and superiour to it. Fig. 5: is likewise a Design of Palladio's, copied from the Porti Palace at Vicenza; and fig. 6. is, I believe, an original Invention of Inigo Jones's, which hath been executed in many buildings in England. I have given, in all, nineteen different Designs for Windows: and for the greater variety, the figures 3, 4, 6, 7, 8, 9, in the Plate of Doors may be employed; they being equally proper either for Windows or Doors.

THE Breasts of all the Windows on the same floor should be on the same level, and raised above the floor, from two foot nine inches, to three foot six, at the very most: when the walls are thick, they should be reduced under the Apertures of the Windows for the convenience of looking out; and Seats may be contrived in the thickness of the wall, as is the custom in most English houses. In France, the Windows are frequently carried quite down to the floor; and this, when the building is surrounded with Gardens, or other beautiful prospects, renders the Apartments exceeding pleasant. But the Iron-work, which, in that Country, is placed on the outside, by way of a fence to prevent accidents when the Windows are thrown open, ought to be avoided: for all the gilding and flourishing in the world cannot make it tolerable. The best way is to compose the fence only of two or three plain Iron-bars, placed directly on a level with the cross

*Windows.*



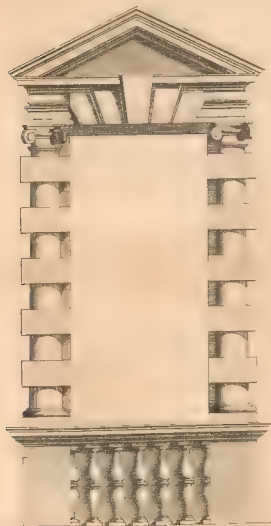
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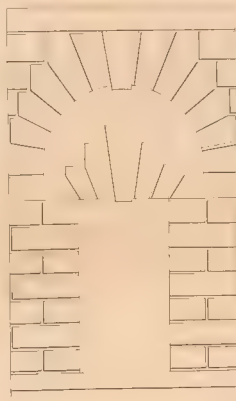
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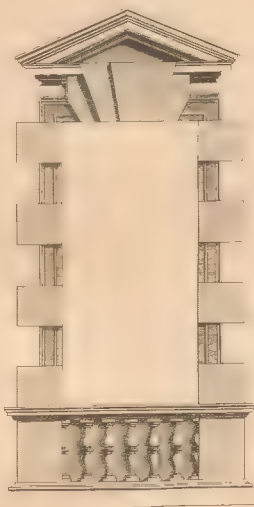
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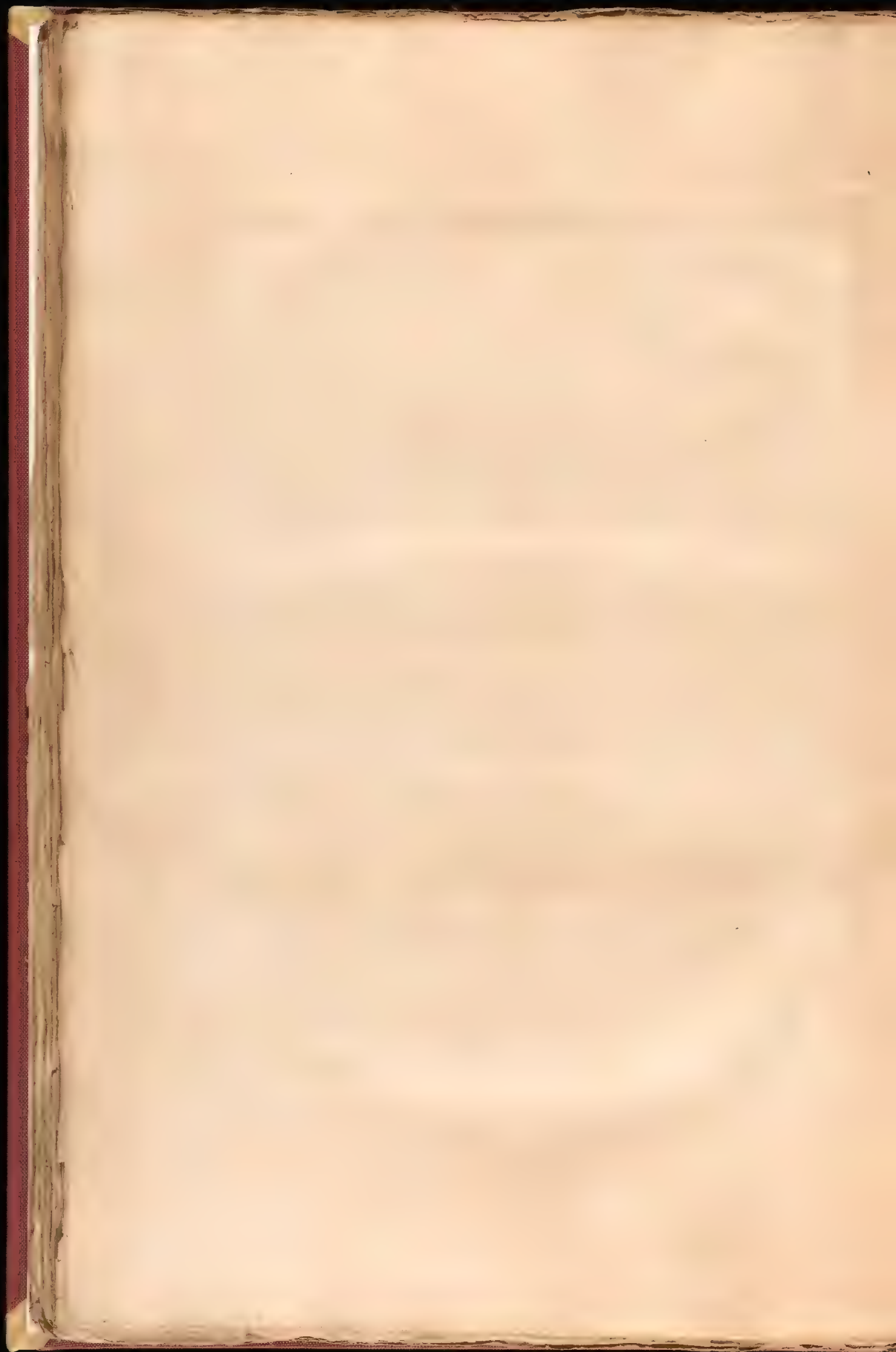


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cross Bars of the Sashes, close to them, and of the same colour that they are, when the Window is shut, will by that means not be discovered.

IN Houses of State, the Breasts of the Windows in the ground floor must be raised 6 foot above the Pavement on the outside of the building, to hinder passengers from looking into the Apartments. But when this cannot be done, without raising the ground floor itself more than is necessary, the lower part of the Windows may be furnished with blinds. The tops of the Apertures of Windows, within the Apartments, should never be carried close to the Cornice of the room, but a sufficient space be left for introducing an Architrave, or at least two or three Mouldings, round them, without crowding upon the Cornice.

THE Interval between the Apertures of Windows depends, in a great measure, on their enrichments. The breadth of the Aperture is the least distance that can be between them; and twice that breadth should in dwelling houses be the largest; otherwise the rooms will not be sufficiently lighted, and the building will look more like a prison, than a place calculated for the conveniencies and enjoyments of life. The purpose for which the building is intended should likewise be considered, and regulate the quantity of light to be introduced. In dwelling-houses, and all places where pleasure is the main purpose, there cannot be too much: but in sacred Structures, which should affect the mind with awe and reverence, and wherever greatness is aimed at, it must be sparingly distributed.

THE Windows nearest to outward angles must be at least the breadth of the Aperture from them; and a larger distance will render the building still more solid. The Windows in all the Stories of the same aspect, must be placed exactly one above another; and those to the left must symmetrise with those to the right, both in size, situation, number, and figure. The reasons for all these things are obvious enough, and therefore it is needless to enumerate them. The licentious practice of intermitting the Architrave and Frize of an Order, in the Intervals between the Columns or Pilasters, to make room for the Windows and their enrichments, which are brought close to the Cornice, can on no account whatever be suffered in regular Architecture; it being in the highest degree absurd to carry the Windows above the Ceiling, and a great want of judgement in an Architect to intermix, and crowd together, such a number of rich and complicated parts, as are those of the Entablature of the Order and the Entablatures of the Windows. Besides, the whole beauty of the Order, when so mutilated, is destroyed; its proportions and figure being entirely changed. The interrupting the whole Entablature, to make room for a Window, and converting it into an Impost to the Archivolt, as we see on the flanks of the Mansion-House, is a licence equally unpardonable. Sir Christopher Wren was extremely fond of these sorts of mutilations; and every lover of Architecture must owe him a grudge for having so unmercifully mangled many parts of the inside of St. Paul's.

THE common sort of Builders, in this Country, are extremely fond of variety in the Ornaments of Windows, and indeed in every other part of a building; imagining, probably, that it betrays a barrenness of Invention, to repeat the same object frequently. There is a House near Berkley-Square, with eleven Windows only in the whole front; and yet they are of seven different sorts. At Iron-Monger's-Hall in the City, the case is the same; there being seven or eight sorts of Windows in the same aspect: and the like is to be met with in many more buildings, both in Town and Country.

try. These inventive Gentlemen would do well to give their attention to some professors of the mechanic arts, who, though exercising their talents on meaner objects, are nevertheless worthy of their imitation. No Taylor thinks of employing seven or eight kinds of Buttons on the same coat: a Cutler will not make ten different sorts of Knives for the same set; and if a Cabinet-Maker be trusted to furnish a room, he seldom introduces more than one sort of Chairs. Their practice is founded on experience: the general approbation of mankind is the standard they go by. We do not discover, either in the works of Antiquity, or in those of the great Modern Architects, any traces of this foolish hankering after variety. The same object is frequently by them repeated a hundred times over: and this is one of the causes of that amazing greatness, and that noble simplicity, so much to be admired in their productions.

THIS sameness must, however have its limits: for when carried too far, the imagination of the beholder stagnates for want of occupation. In the most admired works of Architecture, we find the same object generally continued throughout the same level. Thus one Order, and one sort of Windows, or Niches, generally reigns throughout the story: but in the other stories, where the eye and the imagination necessarily assume a fresh course, the decoration is altered. Scamozzi, and some other eminent Architects, both in their doctrine and practice, are fond of distinguishing the middle of every composition, by an object different from the rest. Thus, in a range of Windows, the middle one is generally either Venetian, or in the form of an Arch; though all the rest are square. How this may affect others, I do not well know: but for my own part, I do not like it. Every one from his own experience must, I think, have felt a sudden uneasiness arising on finding a Stile, a Ditch, or other impediment of that nature, in his way; and the mind is equally troubled when it is thus violently and unexpectedly interrupted in contemplating the parts of a building. Sometimes, however, it may be necessary to encrease the size, and vary the figures, of the Windows, in the middle, or some other part, of a front: as the Earl of Leicester hath done in his noble Palace at Holkham in Norfolk, in order to light a Salon, or Hall higher than the rest of the rooms. But then it will be best to repeat the same form three, five, or more times, according to the extent of the plan; that so the mind may be in some degree fatiated, before it is conducted to a new object. Venetian Windows, and Doors too, are on some occasions necessary; particularly, in small buildings, to light a Hall or Vestibule, &c. But, where they can be avoided, it is best: for the Columns which separate the large Interval, from those on the sides, form such slender partitions, that, at a distance, they are scarcely perceived, and the whole looks like a large irregular breach made in the wall.

THE Sashes of Windows are generally made of Oak. The London Artificers excel in these works: they make them strong, though in appearance slight, and extremely neat: the squares of glass are proportioned to the size of the Windows; there being commonly three in the breadth, and four in the height, whatever be the dimensions of the Window: each Sash is composed of two equal parts, placed one above the other; and either the lowermost or both of them, being hung on pulleys, are moved up or down with great ease, the cords and the leads that counterpoise the Sash being both concealed. These Sashes are much neater, and more convenient, than the French ones; which are composed of two vertical divisions, turn on hinges, and are closed with an apparatus of Iron-work weighing a hundred weight or two. The shutters are always within the Apartments, wherever beauty is aimed at; those on the outside entirely destroying the beauty of the front. They are divided into several vertical slips, folding over each other, for



for the convenience of ranging them in the thickness of the wall, each slip or fold is framed and composed of several Pannels; each of which may be surrounded with a small Ogee, or Ovolo, contained in the thickness of the framing: and, when the Profiles in the room are enriched, these Mouldings must likewise be so; particularly on the fold that faces the Aperture, when the Shutters are folded back; the front of which must come flush with the inner edge of the Architrave round the Aperture, all the other folds being ranged behind it.

### Of Niches, and Statues.

ARCHITECTURE, as Daviler observes, is indebted to Sculpture for a great part of its magnificence; and, as the human body is justly esteemed the most perfect original, it hath been customary, in all times, to enrich different parts of buildings with representations thereof. Thus the Antients adorned their Temples, Basilicas, Baths, Theatres, &c. with Statues of their Deities, Heros, and Legislators: and the Moderns still preserve the same custom; placing in their Churches, Palaces, &c. Statues of illustrious personages, and even Groupes composed of various figures, representing occurrences collected from the Histories, Fables, or Traditions of particular times. Sometimes these Statues, or Groupes, are detached, raised on Pedestals, and placed contiguous to the Walls of a building, or in the Middle of a room, a court, or a public square: but most frequently they are disposed in Cavities made in the Walls, and called Niches. Of these there are two sorts: the one being formed like an Arch in its Elevation, and semicircular, or semi-elliptical in its plan; the other of a parallelogram figure, both in its Plan and Elevation.

THE Proportion of both these depends on the Characters of the Statues, or on the general Form of the Groupes placed in them. The lowest are, at least, a double square in height; and the highest never exceed twice and one half their breadth.

WITH regard to the manner of decorating them, when they are alone in a composition of Architecture, as in the principal front of the old Louvre at Paris, they are generally enclosed in a Pannel, formed and proportioned like the Aperture of a Window, and adorned in the same manner. These Pannels bear the same proportion to the Architecture which they accompany, as a regular Aperture of a Window would do: and the Nich contained in them is carried quite to the bottom; but on the sides, and at the top, there is a small space left, between the Nich and the Architrave of the Pannel. And when Niches are intermixed with Windows, as in the front of Somerset-House towards the River, and at St. Paul's, they may be adorned in the same manner; provided the Ornaments be of the same figure and dimensions as those of the Windows. But when the space between two Windows is not sufficient to admit of this, it is much better to make the Niches entirely plain, than to contract the Aperture, and by that means make the decoration narrower than those of the Windows, as Inigo Jones hath done at Somerset-House; or than to adorn the Niches in a different manner, as Sir Christopher Wren hath done at St. Paul's: for both these expedients are irregular, and cause confusion. The tops and bottoms of these plain Niches must level with the tops and bottoms of the Apertures of the Windows, and not be raised above or sunk below them, as Daviler teaches: for on this, and on all other occasions of the like nature, a continuity of straight lines must constantly be aimed at; it being certain that whenever the eye of the spectator is obliged to dance up and down,

and hunt, if I may be allowed so to call it, for an outline, the images raised in the mind are always confused: and to this, in a great measure, may be attributed the general dislike to the Horse-Guards, which is a building of so complicated a figure, both in its Plan and Elevation, that it is almost impossible to form a distinct idea of the whole at once. The same kind of plain Niches may likewise be employed in narrow Intercolumniations: but care must withall be taken, not to squeeze them in between the Columns or Pilasters; and therefore when the Interval is not sufficient to afford room for a well proportioned Nich, and a space on each side, between it and the Columns, of at least two thirds of a Module, it will be better to have none at all.

THE size of the Statues depends on the dimensions of the Niches. They should neither be so large as to seem rammed into them, as at Santa Maria Maggiore at Rome; nor so small as to seem lost in them, as in the Pantheon, where they do not occupy above three quarters of the height of the Nich, and one half of its breadth. Palladio makes the chin of his Statues, in arched Niches, on a level with the top of the Impost: so that the whole head is in the coved part. In the nave of St. Peter's at Rome, the same proportion hath been observed; and it hath a very good effect. The distance on the sides, between the outline of the Statue and the side of the Nich, should never be less than one third of a head, nor more than one half; whether the Nich be square or arched: and, when it is square, the distance, from the top of the head to the ceiling of the Nich, should not be greater than the distance on the sides. The Statues are generally raised on a Plinth, the height of which may be from one third to one half of a head; and sometimes, where the Niches are very large in proportion to the Architecture they accompany, as is the case when an Order comprehends but one story, the Statues may be raised on small Pedestals; by which means they may be made lower than usual, and yet fill the Nich sufficiently; it being to be feared lest Statues, of a proper size to fill such large Niches, should make the Columns and Entablatures appear trifling. The same expedient must also be made use of, whenever the Statues in the Niches, according to their common proportion, come considerably larger than those placed at the top of the building. A trifling disparity will not be easily perceived, on account of the distance of their situation; but if it be great, it must have a bad effect: and therefore this must be attended to, and remedied, either by the above mentioned method, or by entirely omitting the Statues at the top of the building, leaving the Balustrade free, or placing upon it Vases, Trophies, &c. Some Writers, indeed, give these Ornaments the preference at all times, to Statues, or Animal Representations on the tops of buildings, and eminences; alledging that it is absurd to suppose Horses and Men constantly standing on the Roofs, or stuck up in the Niches of a second or third story, and very shocking and frightful to the imagination. De Cordemoy advises, by all means, to avoid placing Statues too far from the ground; and Le Clerc is for having nothing but Tutelar Angels on the tops of houses. To me there appears something ridiculous in this affectation of propriety; and, I believe, it may in general be established, that, whenever the image is so different from the original it represents, as not to leave the least probability of its being ever mistaken for the real object, this strict adherence to propriety is superfluous.

THE Character of the Statue should always correspond with the Character of the Architecture, with which it is surrounded. Thus, if the Order be Doric, Hercules, Jupiter, Mars, Esculapius, and all male Statues representing beings of a Robust and Grave nature, may be introduced: if Ionic, then Apollo, Bacchus, &c. and if Corinthian, Venus, Flora, and others of a delicate kind and slender make, naturally take place.

NICHES





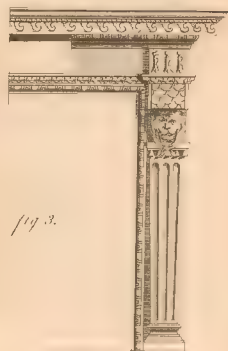
*Designs for Chimney-Pieces.*



*fig. 1.*



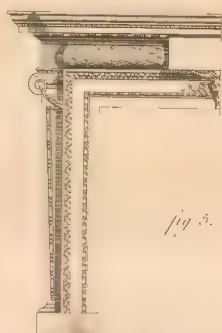
*fig. 2.*



*fig. 3.*



*fig. 4.*



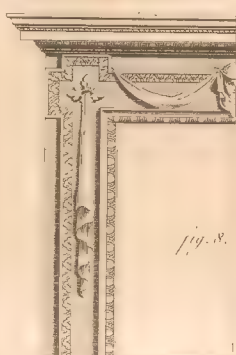
*fig. 5.*



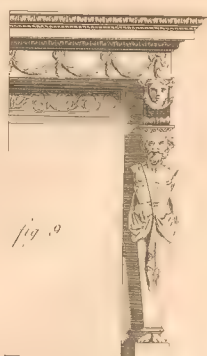
*fig. 6.*



*fig. 7.*



*fig. 8.*



*fig. 9.*

NICHES being designed as repositories for Statues, Groupes, Vases, &c. they must be so contrived as to set off the things they are to contain to the best advantage. Therefore no Ornaments should ever be employed within them, as is sometimes practised; the Cove of the Nich being adorned with a large Scallop-Shell, or the whole inside of it with Rustics, Compartments of Frostwork, or of different coloured Marbles: for these things confound the outline of the Statue, or Groupe; and it is even best not to employ an Impost within the Nich; even that being a considerable disadvantage to the figures, which never appear so perfect as when detached on a smooth surface: an excess of Ornaments round the Nich should likewise be avoided; and particularly Masks, Busts, Boys, or any representations of the human figure; all which serve to divide the attention and divert it from the principal object. The depth of the Nich should always be sufficient to contain the whole Statue, &c. it being disagreeable to see Statues, or any other weighty objects, have a false bearing, and supported on Consoles; and, in the present case, the flank views are very uncouth: for in these, a leg, an arm, a head, in short, those parts alone which project beyond the Nich; appear, and look like so many fragments stuck irregularly in the Wall.

### Of Chimney-Pieces.

AS the Egyptians, the Greeks, and the Romans, to whom Architecture is so much indebted in other respects, lived in warm climates, where fires in the Apartments were seldom or never necessary, they have thrown but few lights on this branch. Amongst the Antiquities of Italy, I do not recollect any remains of Chimney-Pieces. Palladio indeed mentions two; the one at Baia, and the other near Civita Vecchia; which stood in the middle of the rooms, and consisted of Columns supporting Architraves, whereon were placed the Pyramids, or Funnels, through which the smoke was conveyed, much after the manner of the Chimney-Piece of the Rotunda in Ranelagh Gardens. Scamozzi takes notice of three sorts of Chimney-pieces, used in Italy in his time: one of these he calls the Roman, the Aperture of which is surrounded only with a clumsy Architrave; another he calls the Venetian, which is likewise adorned with an Architrave, crowned with a Frize and Cornice, having on the sides of the Architrave Pilasters and Consoles; and the third sort he calls a *Padiglione*.

THE last he particularly recommends, where the Walls are thin; it being not hollowed into the Wall, as the others are, but composed of a projecting Entablature, supported by Consoles, Terms, Caryatides, &c. on which the Pyramid is placed. This sort of Chimney-Piece is very common in Italy, and the figures 4 and 9, in the annexed Plate, are the lower parts of two of them, designed by Palladio, and executed, the one in the Casa Trevisani in the Island of Murano, and the other in the Valmarani Palace at Vicenza.

NEITHER the Italians nor the French have excelled greatly in compositions of Chimney-Pieces. I believe we may justly consider Inigo Jones as the first who arrived at any great degree of perfection, in this material branch of the Art. Others of our Architects, since his time, have wrought upon his ideas; and some of them, particularly the late Mr. Kent, have furnished good inventions of their own. England is at present possessed of many able sculptors, whose chief employment being to execute magnificent Chimney-Pieces, now happily much in vogue, it may be said that, in this particular, we sur-

pass all other nations; not only in point of expence, but likewise in taste of Design, and goodness of Workmanship. Scamozzi mentions a Chimney-Piece, in one of the Public Buildings at Venice, executed from his Designs, as a most uncommon piece of magnificence, having cost upwards of a thousand crowns. In this country a much larger expence is very frequent, and many private houses are furnished with Chimneys, at least as valuable.

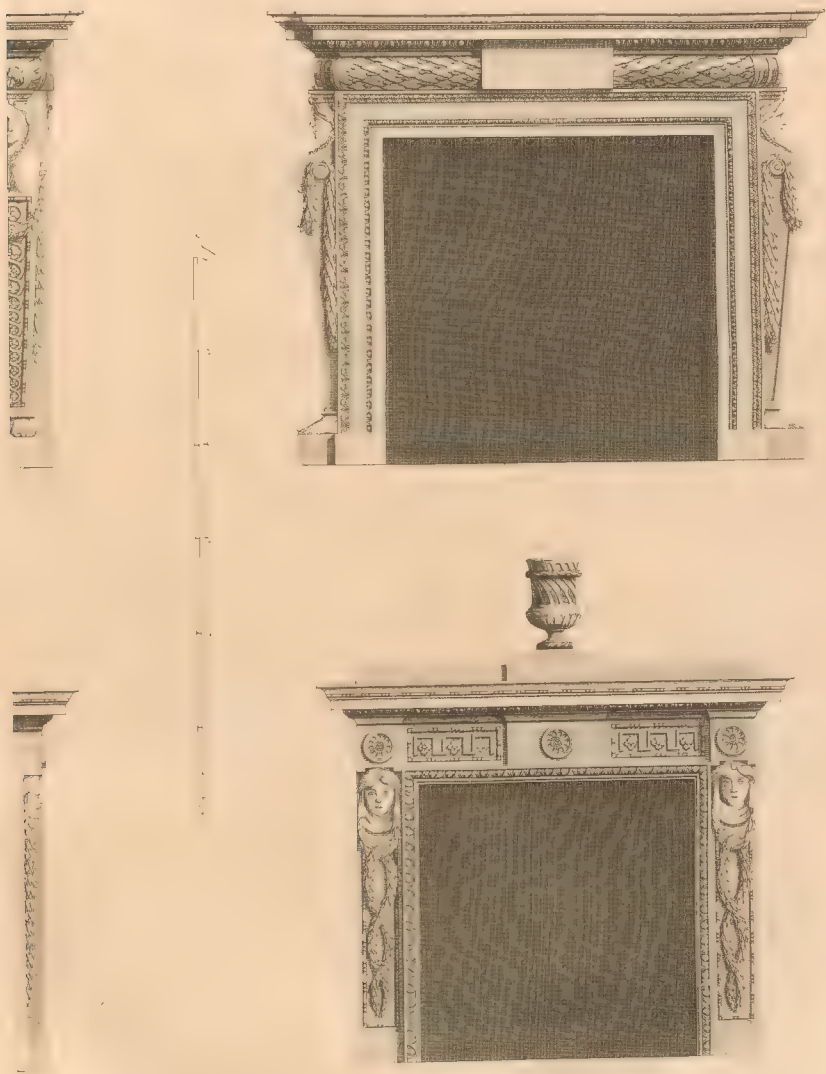
THE size of the Chimney depends upon the dimensions of the Room where it is placed. In the smallest Apartments, the breadth of the Aperture is never less than three foot, to three foot six inches; in rooms from 20 to 24 foot square, or of equal superficial dimensions, it may be from four; to four and a half foot broad; in those of 24 to 27, from four and a half to five, and in such as exceed these dimensions, the Aperture may even be extended to five and a half or six foot. But if the room be extremely large, as is frequently the case of Halls, Galleries, Salons, &c. and that a Chimney of this size affords neither sufficient heat to warm the room, nor space round it for the whole company, it is much more convenient and handsomer to have two Chimneys of a moderate size, than a single one exceeding large, all the parts of which would be clumsy; and disproportioned to the other Ornaments of the room.

THE Chimney should always be situated so as to be immediately seen by those who enter; that they may not have the persons already in the room, who are generally seated near the fire, to look for. The middle of the Partition Wall is the properest place in Halls, Salons, and other rooms of passage, to which the principal entrances are, commonly, in the middle of the front of the back Walls: but in Drawing-Rooms, Dressing-Rooms, and the like, the middle of the back-wall is the best situation; the Chimney being then far removed from the doors of communication. And the case is the same with respect to Galleries and Libraries, whose doors of Entrance are generally at one end. In Bed-Rooms the Chimney is always placed in the middle of one of the partition walls; and in Closets, and other very small places, it is, to save room, put in a corner. Wherever two Chimneys are used in the same room, they must be regularly placed, either directly facing each other, if in different walls, or at equal distances from the center of the wall, in which they both are. The Italians frequently put their Chimneys in the front Walls, between the Windows: but this must be avoided; for by so doing that side of the room is crowded with Ornaments, and the rest are left bare, the front Walls are much weakened, and the length of the Funnel at the top of the building, which must necessarily be carried above the ridge of the roof, have a very disagreeable effect, and are far from being solid. In large buildings, where the Walls are of a considerable thickness, the Funnel is carried up in the thickness of the Wall: but in small ones this cannot be done; and therefore the Chimneys advance considerably into the rooms, which hath a very bad effect; and, where room can be spared, it will always be best to make Cup-boards, or Closets, in the recesses on each side of the Chimneys, with blind doors to them; the partitions being either of Wainscot, with Pannels, hung with paper, or finished in any manner suitable to the other part of the room. By this means, the Cornice, or Entablature, of the room may be carried round without any Breaks, the Ceiling be perfectly regular, and the Chimney have no more projection than is necessary to give its Ornaments a proper relief.

THE proportion of the Apertures of Chimney-Pieces of a moderate size, is generally near a perfect square; in small ones it is a trifle higher; and in large ones a trifle lower



*Chimney-Pieces, in the Lord Viscount Charlemont's Casine at Marino ~*





lower. Their Ornaments consist in Architraves, Frizes, Cornices, Columns, Pilasters, Terms, Caryatides, Consoles, and all kinds of ornaments of Sculpture, representing Animal and Vegetable productions; likewise Vases, Chalices, Trophies of Arms, and other Instruments and Symbols of Religion, Commerce, War, Arts, and Letters. In designing them, regard must be had to the nature of the place where they are to be employed. Such as are intended for Halls, Guard-Rooms, Salons, Galleries, and other large places, must be composed of large parts, few in number, of distinct and simple forms, and having a bold relief; but Chimney-Pieces for Drawing-Rooms, Dressing-Rooms, Bed-Rooms, &c. may be of a more delicate and complicated composition. The Workmanship of all Chimney-Pieces must be perfectly well-finished; like all other objects liable to a close inspection; and the Ornaments, Figures, and Profiles, both in form, proportions, and quantity, must be suited to the other parts of the room, and allusive to the uses for which it is intended. All nudities, and indecent representations, must be avoided in Chimney-Pieces; and indeed, in every other Ornament of Apartments, to which Children, Ladies, and other modest and grave persons, have constant recourse; together with all representations capable of exciting Horror, Grief, Disgust, &c.

CHIMNEY-Pieces are composed of Wood, Stone, or Marble; the last of which is to be preferred. All Ornaments, Figures, or Profiles, are best when of the pure white sort: but Frizes, Tablets, Pannels, Shafts of Columns, and other plain parts, may be made of Marbles of variegated Colours; such as the yellow of Sienna, the Brocatello of Spain, the Diasper of Sicily, and many others to be had in England. Festoons of Flowers, Trophies, &c. cut in white statuary Marble, and fixed on a ground of these, have likewise a good effect: but there should never be above two or three different sorts of Marbles, at the utmost, in the same Chimney-Piece, all of brilliant Colours, and harmonizing with each other.

IN the two Plates annexed are eleven different Designs for Chimney-Pieces; some of them composed by Palladio and Inigo Jones, the rest by myself. Their proportions may be gathered from the Designs, which are pretty accurately executed.

THE Funnels of the Chimneys must be regularly disposed at the top of the building, and all of them made of the same height, breadth, and figure. They will be handsomest when made of Stone, of a cubical form, and finished with a slight Cornice, composed of three or four Mouldings. Serlio hath given several Designs for the tops of Funnels, which resemble Towers; and Sir John Vanbrugh frequently converted his into Castles. Neither the Italians nor the English have been very successful in their Designs for this purpose: but upon the same principles good ones might be made, and on some occasions applied with propriety, though seldom. Obelisks, or Vases, might likewise be sometimes employed, as Scammozzi directs.

### *Of Profiles for Doors, Windows, Niches, Chimney-Pieces, &c.*

WHEN any of the above mentioned objects are very large, the Profiles of the Orders are employed in their decoration: but if they are small, as is more frequently the case, other Profiles, of a less complicated figure, are used. Palladio hath, in his first Book, given Designs of several; three of which are exhibited in the annexed



## 80 *Of Profiles for Doors, Windows, Niches, Chimney-Pieces, &c.*

nexed plate. Fig. 1. is the richest of the three, and very proper for Windows, &c. of the Corinthian Order. The account given by that Author of its proportions is as follows: viz. the Architrave being divided into four equal parts, let three and a half of these be given the height of the Frize, and five to the height of the Cornice: then dividing the whole Architrave into eight parts, five of them are for the Fascia, and three for the Mouldings: which last being divided again into seven parts, one of them is for the Astragal, and the remaining six being once more divided into eight parts, three of them must be given to the Ogee, three to the Cavetto, and two to the Fillet. The height of the Cornice is to be divided into six parts and three quarters; three of which are given to the part under the Corona, composed of an Ogee, a Dentil-band, and an Ovolo; the projection of the Ogee being equal to its height, that of the Dentil to two thirds, and that of the Ovolo to three quarters of their respective heights: the three quarters of a part are given to the height of the Ogee between the Cyma and the Corona; and the remaining three parts, being divided into seventeen, nine of them are for the Cyma and Fillet, and eight of them for the Corona. The whole projection of the Cornice is equal to its height.

Fig. 2. may be employed in an Ionic, or rich Doric Order. Its Architrave is to be divided into four parts, and the Frize made equal to three and the Cornice to five of these. The Architrave must then be divided into three parts; two of which are to be divided into seven, three of them being for the lower, and four for the upper Fascia: the remaining third part is to be divided into nine, two of which divisions are given to the Astragal; and the other seven being divided into five, two of them are for the Fillet, and three for the Ogee. The height of the Cornice is to be divided into five parts and three quarters: one of these must be divided into six, and five of the six given to the Ogee; and one to the Fillet; the projection of both these members being equal to their height: another of the five and three quarter parts is given to the Ovolo, whose projection is three quarters of its height. The Fillet above the Ovolo is one sixth of it in height, and its projection is equal to its height: the other three parts are to be divided into seventeen, and eight of these given to the height of the Corona, whose projection is equal to one and one third of its height; the other nine seventeenth parts are to be divided into four parts, and three of them given to the Cyma, and one to the Fillet: the remaining three quarters are to be divided into five parts and a half, one of which is for the Fillet under the Cyma, and the rest is for the Ogee: the whole projection of the Cornice is equal to its height. Fig. 3. is proper in a Doric Order. Its divisions are less complicated than the former two, and may easily be collected from the Design.

All Profiles of Doors, Windows, and in short the Profiles of all the subservient parts, must not only be less in the whole, but likewise in each particular member, than those of the Orders employed in the same composition, or than the Cornice, or Entablature, which serves as a finishing to the whole: it being the grossest of errors, to make any Ornaments belonging to the parts more predominant than those that are particularly appropriated to the embellishment of the whole mass; as Pietro da Cortona hath done at St. Carlo, in the Corso at Rome, where the Profiles of the great Door on the inside are considerably larger than those of the Order in which it is contained:

Block Cornices and Entablatures are frequently used to finish plain buildings, where none of the regular Orders have been employed. Of this kind there is a very beautiful one, composed by Vignola, much used in Italy, and employed by Sir Christopher Wren  
to

*Profils för Wandens, Tors, Nischen, or Chimney Pieces.*

Fig. 1.

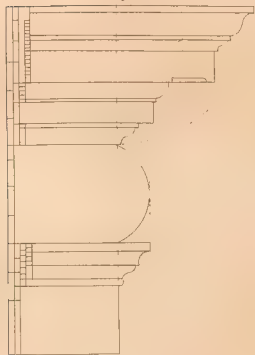


Fig. 2.

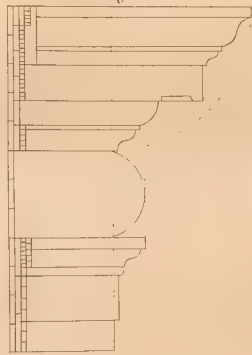


Fig. 3.

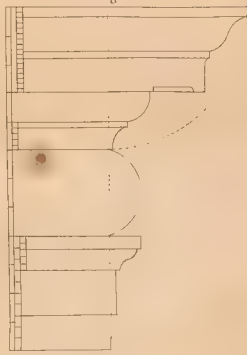


Fig. 4.

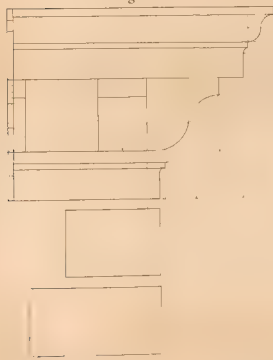


Fig. 5.

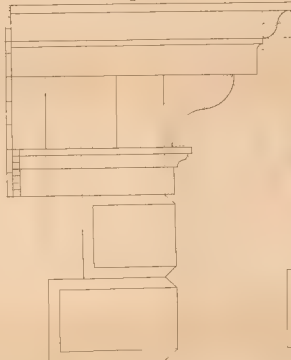
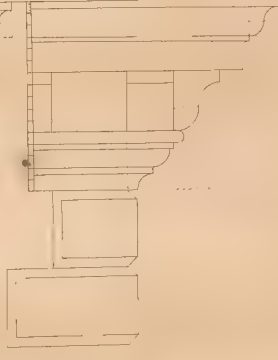


Fig. 6.



*Block Entablatures & Rustic Quoins.*

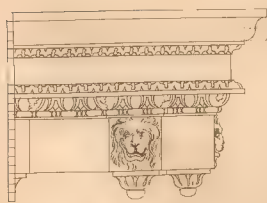


Fig. 7.

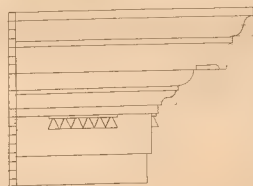


Fig. 8.

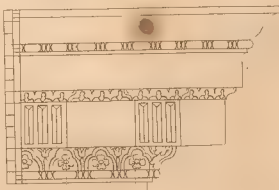


Fig. 9.

*Block Cornice.*

*Architrave Cornice.*

*Block Cornice.*





to finish the second Order of St. Paul's. I have given a Design of it in the second Plate of the Composite Order, with the measures of all its parts, determined according to Vignola's method, by a Module divided into eighteen Minutes. When this Entablature is used to finish a plain building, the whole height is found by dividing the height of the whole front into eleven parts; one of which must be given to the Entablature, and the remaining ten to the rest of the front: and when it is employed to finish an Order, which however may as well be let alone, it must be somewhat less in proportion to the Columns than a regular Entablature would be; because its parts are larger. The Angles of the building, where this Entablature is used, may be adorned with Quoins; the short ones about a Module broad, and the long ones a Module and a half; the height of both being about three quarters of a Module, including the joint.

AMONG the Profiles for Windows, &c. there are three other Block Entablatures, of a simpler make; the second of which Palladio hath executed in a couple of houses, the one at Vivaro, and the other at Montecchio, villages of the Vicentine: the other two are not very different from that: the measures of all of them are taken from Mr. Gibbs's Rules, and may easily be collected from the Designs. These Entablatures need not exceed one thirteenth of the whole height of the front; nor should they ever be much less. Fig. 7. and 9, in the same Plate are two block Cornices; the former of which is executed in a Palace at Milan, and the other by Raphael, at a house in the Lungara at Rome: the height of these need never exceed one sixteenth part of the height of the whole front. Fig. 8. is an Architrave Cornice, which M. Angelo, Baldassar Peruzzi, and Palladio, have employed in some of their Compositions. This kind of Profile is a proper finishing for Columns supporting the Archivolts of Arches, as it approaches nearer the proportion of an Impost than a regular Entablature would do: its height may be one eighth of the height of the Column.

### *Of the Proportions of Rooms.*

THE Proportions of Rooms depend, in a great measure, on their use, and actual dimensions: but, with regard to beauty, all figures, from a square to a sesquialteral, may be employed for the Plan. Inigo Jones, and other great Architects, have sometimes even exceeded this proportion, and extended the Plan to a double square: but the great disparity, between the breadth and length of this figure, renders it impossible to suit the height to both: the end views will appear too high, or the side ones too low. It may, perhaps, to some appear absurd to make this objection, when Galleries are frequently three, four, or five times as long as broad. But it must be observed, that, in this case, the extraordinary length renders it impossible for the eye to take in the whole extent at once; and therefore the comparison between the height and length can never be made.

THE height of Rooms depends upon their figure. Flat-Ceiled ones may be lower than those that are Coved: if their Plan is a Square, their height should not exceed five sixths of the side, nor be less than four fifths; and when it is an Oblong, their height may be equal to their breadth. But Coved rooms, if Square, must be as high as broad; and when Oblong, they may have their height equal to the breadth, more one fifth, one quarter, or even one third, of the difference between the length and breadth: and Gal-

eries should, at the very least, be in height one and one third of their breadth, and at the most, one and a half, or one and three fifths. These Proportions are all perfectly good, as they obviate any idea of confinement, and, at the same time, render it practicable, for those who are in the room, to examine the Figure and Ornaments of the Ceiling without pain or difficulty.

It is not, however, always possible to observe exactly these Proportions. In Dwelling-houses, the height of all the rooms on the same floor is generally the same, though their extent be different; which renders it extremely difficult, in large buildings, where there are a great number of different sized rooms, to proportion all of them well. The usual method, in buildings where beauty and magnificence are preferred to economy, is to raise the Hall and Salon higher than the other rooms, and make them occupy two Stories; to make the Drawing-Rooms, with Flat Ceilings; to Cove the middle-sized rooms one third, one quarter, or one fifth of their height, according as it is more or less excessive; and in the smallest Apartments, where even the highest Coves are not sufficient to render the height tolerable, it is usual to contrive Mezzanines above them; or, when there is not room enough for this, to construct false Ceilings. The Earl of Leicester's house at Holkham is a master-piece in this respect, as well as in many others: the distribution of the Plan, in particular, is never enough to be admired; it being inimitably well contrived, both for state and conveniency: and with regard to the whole interior decoration, it may certainly vie in point either of magnificence or taste, with any thing now subsisting.

THE coldness of our English climate, and the frugality of those who build, are strong objections to high rooms: so that we frequently see the most magnificent Apartments, not above fifteen, sixteen, or at most eighteen foot high; though the extent of the rooms would require a much more considerable elevation. But this practice is not to be imitated, where beauty is aimed at. There are many good expedients for warming rooms, however spacious or lofty; and to consider expence, in this particular alone, is an ill judged piece of parsimony; as it renders all other expence employed in the decoration of the room ineffectual.

WHEN rooms are adorned with an entire Order, the Entablature should never exceed one sixth of the whole height, in Flat-ceiled rooms, and one sixth of the upright part in Coved ones; and, when there are neither Columns nor Pilasters, but only an Entablature, its height should not be above one seventh of these heights. If the rooms are finished with a simple Cornice, it should never exceed one fourteenth, nor ever be less than one fifteenth part of the above mentioned heights: and, when there is a Frize added to the Cornice, with an Astragal and Fillet under it, as is sometimes customary, the whole height of these, together with the Cornice, should not exceed one eighth of the upright height of the room. In general, all the Profiles within the building must be more delicate than those on the outside. The Architraves of the Doors and Windows should never exceed one sixth of the breadth of the Aperture; on most occasions, one seventh will be sufficient, and all the other parts must be diminished proportionably.

### Of Ceilings.

**C**EILINGS are either flat, or coved in different manners. The simplest of the flat kind are those adorned with large compartments, surrounded with one, or several Mouldings, either let into the Ceiling, or projecting beyond its surface, as represented in the first, second, and tenth figures, in the first plate of Ceilings: and when the Mouldings that form the Compartments are enriched, and some of the Compartments adorned with well executed Ornaments, such Ceilings have a very good effect, and are very proper for common dwelling-houses, and all low Apartments. Their Ornaments and Mouldings do not require a bold relief, but being near the eye, they must be finished with taste and neatness. For higher rooms, the kind of flat Ceilings represented in the third, fourth, seventh, and eighth figures, of the same plate, and in one of the figures of the second plate, are more proper; as they have a much bolder relief. The use of these is frequent, both in Italy and England. They seem to be composed of various Joists, framed into each other, and forming Compartments of different geometrical figures. The designs which I have given are all for square Ceilings: but oblong ones, or those of any other form, may be comparted in the same manner; the figures of the Compartments being varied according to the fancy of the composer, and made either Polygonal, Circular, or Elliptical. The sides of the Joists, forming the Compartments, are generally adorned with Mouldings; and represent either a simple Architrave, or an Architrave-Cornice, according to the size of the Compartments, and the height of the Room: and sometimes the larger Compartments are deeper than the small ones, with which they are accompanied, and surrounded with a fuller Profile: as in the flat Ceiling in the second plate; which is a Design of Baldassar Peruzzi, executed in the vestibule of the Massimi Palace at Rome. The Soffits of the Joists are seldom left plain, but adorned with *GUILLOCHIS*, or Frets of various kinds; of which I have given a good number of Designs in the first and second plates of Ceilings: and, when the utmost degree of richness in the decoration is aimed at, the bottom of the Compartments is likewise adorned, either with Paintings, or with Basso-relievos, representing Grotesque figures, &c. of which there are some Designs in the first plate of Ceilings.

**C**OVED Ceilings are more expensive than flat ones; but they are likewise more beautiful: they are promiscuously employed in large and in small rooms, and occupy from one fifth to one third of the height of the Room, according as that height is more or less considerable. If the room is low, in proportion to its breadth, the Cove must likewise be low; and when it is high, the Cove must likewise be so: by which means the excess of height will be rendered less perceptible. But, where the Architect is at liberty to proportion the height of the room to its superficial dimensions, the most eligible proportion for the Cove is one quarter of the whole height. In Parallelogram figured rooms, the middle of the Ceiling is generally formed into a large flat Pannel; as in the fifth and sixth figures of the first plate of Ceilings; which is either left plain, painted, or adorned with Compartments, or other Ornaments, according as the decoration is to be rich or simple. This Pannel, with the border that surrounds it, may occupy from one half to three fifths of the breadth of the room. The figure of the Cove is, generally, either a quadrant of a Circle or of an Ellipsis, taking its rise a little above the Cornice, (that so the whole Curve may be seen from the end of the room,) and finishing at the border round the great Pannel in the center. The border projects somewhat beyond the Coves on the out side; and, on the side towards the Pannel, it is, generally, made of a sufficient depth to admit



mit the Ornaments of an Architrave, or an Architrave Cornice. The coved part of the Ceiling may either be left plain, as in one of the above mentioned Designs, or adorned, as in the other; either, in the manner there represented, or in any other of the same kind, or with Compartments, of which there is a great variety in the third Plate of Ceilings, very proper both for this purpose, and likewise to adorn flat Ceilings.

IN England, circular rooms are not much in use: but they are nevertheless very beautiful. Their height must be the same as that of square rooms: their Ceilings may be flat; but they are handsomer when coved, or of a concave form, whether of a semi-circular or semi-elliptical Profile. In the fourth Plate of Ceilings I have given five different Designs for them, composed by M. Angelo, Bartolomeo Amanato, and Algardi, and executed in the Capitol, the Mattei Palace, and the Villa Pamphilia at Rome: Compartments are likewise very proper for these.

Arches Doubleaux, or Soffits of Arches, as Mr. Gibbs calls them, are frequently enriched. When narrow, their Ornaments consist of *Guillochis*, or Frets: but when broad, they are adorned in a different manner. I have given several Designs of them, composed by Raphael, Amanato, and M. Angelo, and executed at St. Peter's, the Palazzo Mattei, and the Villa Madama.

WHEN the Profiles of the room are gilt, the Ceilings must likewise be so. The usual method is to gild all the Ornaments, and to leave the grounds white, pearl colour, light blew, or of any other tint proper to set off the gilding to advantage. It requires a good deal of judgement to distribute the gilding properly: care must be taken not to leave some places bare, while others are so much covered that they appear like lumps of gold; and, in general, it is to be observed, that, wherever the gilding tends, in the least, to confuse the Design, or render the outline of any part indistinct, it is ill employed.

PAINTED Ceilings, which compose one of the great embellishments of Italian and French structures, are not at all in use among us. Should they come into fashion, we might hope to see the noble branch of History-painting flourish in England: and till then it cannot reasonably be expected; as Religion hath banished pictures from our Churches, and the Prejudices of our Connoisseurs hath excluded all modern performances in painting from our houses.

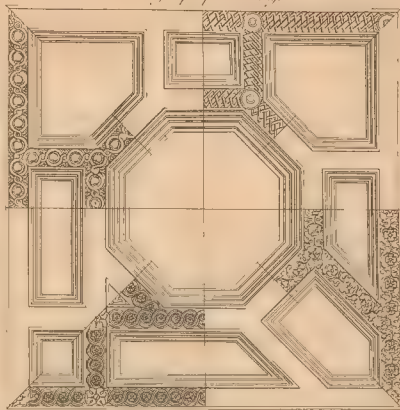
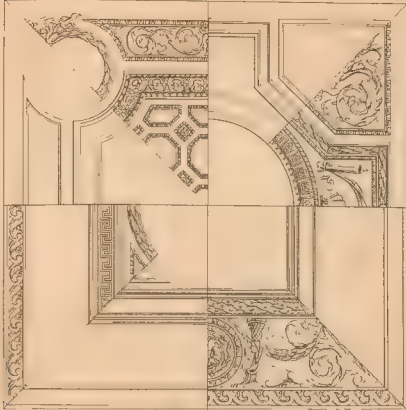
I have now gone through the different branches of the Ornamental part of Architecture, which is all I purpose, at this time, to treat of; reserving for a future work those parts which relate to Convenience, OEconomy and Strength. Not knowing how far I might be equal to the task, I did not chuse to load the public with too bulky a performance, possibly of little merit, nor to risque my own fortune in an enterprize, perhaps equally unprofitable to myself and others. The work now offered will serve as a specimen of what I intend; and if it meets with an indulgent reception, I shall immediately proceed to compleat the whole. In the mean time, what is now published may be considered as a distinct performance, in all respects unconnected with any thing that is to follow: which method I chose, both for my own security, and from a regard to the interest of my encouragers; many of whom have no occasion for any other part of Architecture, than what is contained in the present work; the other branches, however important they may be to builders, being of little service to the generality of men of fortune, who are desirous of being enabled to judge of the Beauties of a building, without entering into the detail of it's Construction.

THE

# Ornaments for Ceilings.

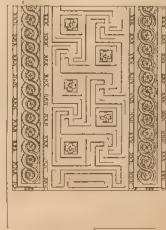
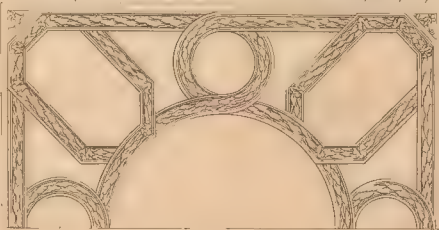
Designs for flat ceilings

Designs for flat ceilings



Designs for Groined Ceilings

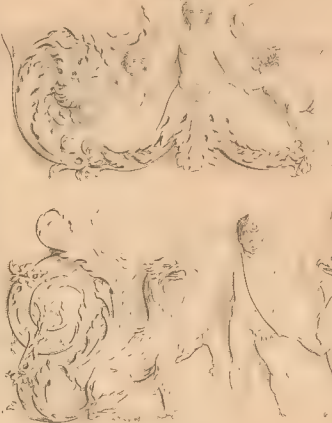
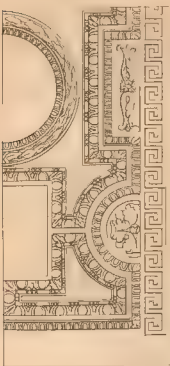
Designs for flat ceilings



Designs for Groined Ceilings

Designs for flat ceilings

Designs for Groined Ceilings



Designs for Groined Ceilings

Various Ornaments for the Compartments of Ceilings







*Ornaments for Ceilings.*



*Ornaments for a Flat Ceiling*



*Ornaments for the Cornices of a Ceiling*



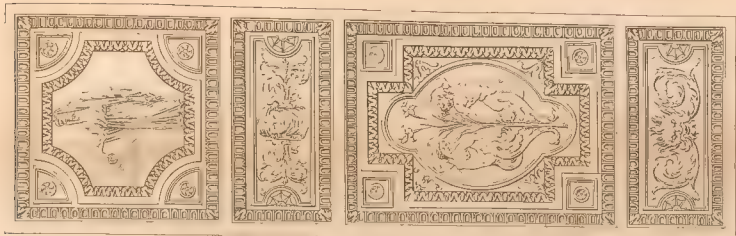
*Profile of the Ceiling above*

*At the end of the book*



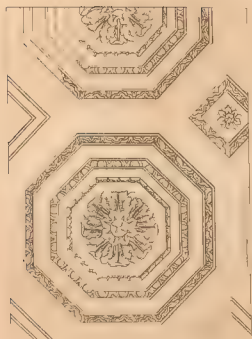
*Ornaments for the Cornices of a Ceiling*

*At the end of the book*





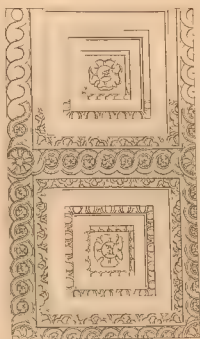
*Compartments for Coved Ceilings.*



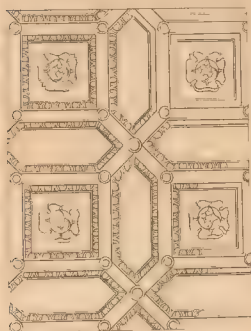
*Octagons and Squares*



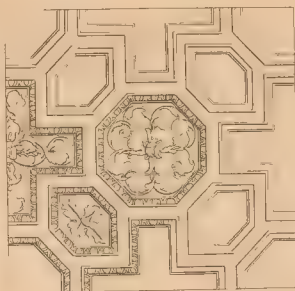
*Hexagons and Lozenges*



*Squares with Enriched Borders*



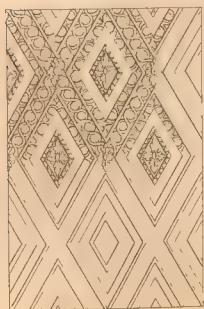
*Squares Octagons & Hexagons*



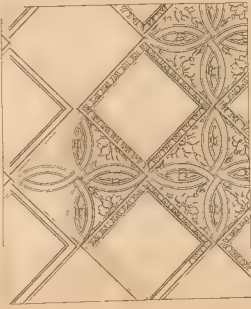
*Octagons, Hexagons and Lozenges*



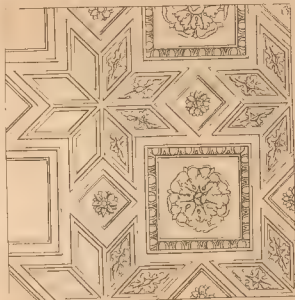
*Hexagons & Triangles*



*Lozenges with Enriched Borders*



*Squares & Emerald Cut Circles*

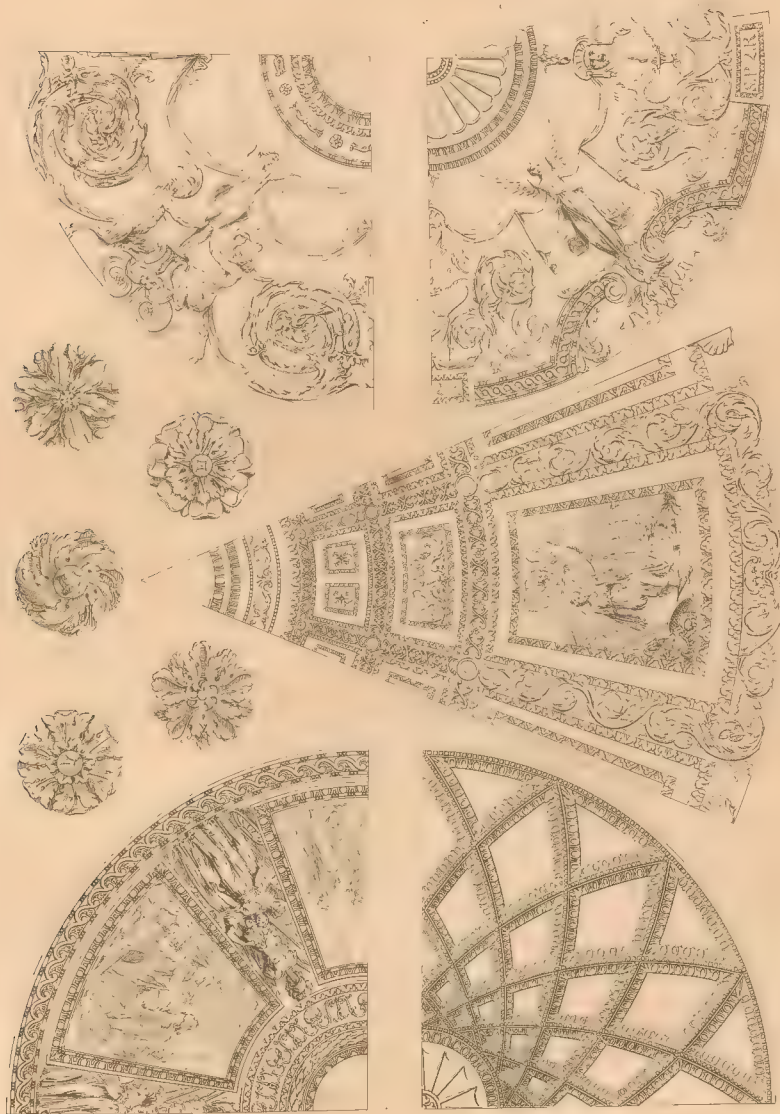


*Squares & Stars with Flowers & Lozenges*





*Ornaments for Circular, Oval, Elliptical, &c.*







THE concise manner in which I have treated my subject will, it is hoped, be some inducement to persons of distinction to peruse my performance: and, if the precepts are as clear and satisfactory as I intended, the book will be of some use, and open a new field of pleasure, to travellers in particular; many of whom from an utter ignorance in Architecture, as well as in other Arts, have heretofore lost half the fruits of their journeys, returned unacquainted with the most valuable productions of the countries they had visited, and perfectly dissatisfied with an expedition, from which they had reaped very little either instruction or amusement.

*Designs for Casines, Temples, Gates, &c.*

**I**N the first Plate is the Elevation of a magnificent Casine, now erecting from my Designs, at Marino, a Seat of the Lord Viscount Charlemont's, near Dublin in Ireland.

IN the second Plate are the Plans of the Cellar and principal Stories of the same Building. There is an Attick Story above the principal, consisting of two Bed-rooms: and over the Study there is a Mezzanin.

IN the third Plate are the Plans and Elevation of a Casine composed by me, and now building under my direction, at Wilton, the Seat of the Earl of Pembroke in Wiltshire.

IN the fourth Plate is an Elevation of the principal Front of a Casine, designed by me for Lord Bruce, to be erected at Tanfield-Hall, his Lordships Seat in Yorkshire.

IN the fifth Plate is a Plan of the principal Floor of the same Building; and another of a kind of Monopteros Temple, with a couple of rooms adjoining to it, designed by me for Henry Willoughby of Birdshall Esq.

IN the sixth Plate is an Elevation of the principal Front of the same Temple.

IN the seventh Plate are the Plan and Elevation of a Doric Octagon Temple, designed by me, some years ago, for the Earl of Tilney, and proposed to be erected at Wansted.

THE eighth Plate exhibits the same disposition, decorated in a different manner.

IN the ninth Plate are Designs of a Corinthian Prostyle Temple.

IN the tenth Plate are the Plan and Elevation of a Design, made by me for Sr. Thomas Kennedy, to be erected at his Seat in Scotland.

IN the eleventh Plate are the Plan and Elevation of a Mausoleum, to the Memory of Mr. Pope, designed by me.

IN the twelfth Plate are two Doors, designed by Palladio.

IN the thirteenth Plate is a Tuscan Gate, imitated from one said to be designed by Palladio, which serves as a back entrance to the public Garden at Vicenza.

IN the fourteenth Plate is a Triumphal Arch, composed by me, and executed under my inspection at Wilton.

IN the fifteenth Plate is a Design of a Rustic Tuscan Gate, imitated from Inigo Jones's York-Stairs. An Antique Inscription was by mistake, put into the Table, which could not be erased without spoiling the Plate.

IN the sixteenth Plate is a Design of mine, made by order of his Grace the Duke of Richmond, for an Entrance to Privy-Garden.

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## Directions to the BINDER.

### The PLATES Representing

**P**RIMITIVE Buildings must front page 1. Regular Mouldings, &c. p. 3. Orders of the Antients, p. 8. Tuscan Order, p. 15. Doric Order, p. 17. Doric Entablatures, p. 21. Ionic Order, p. 23. Goldsmith's Volutas, p. 24. Ionic Entablatures, p. 25. Composite Order, p. 26. Composite Entablatures, and Capitals, p. 28. Corinthian Order, p. 29. Pilaster Capitals, p. 31. Persians and Caryatides, p. 36. Intercommunications, p. 42. Arches without Pedestals, p. 46. Arches with Pedestals, p. 48. Various forms of Arcades, p. 50. Columns upon Columns, p. 51. Arches upon Arches, p. 54. Pediments, &c. p. 58. Balusters, p. 61. Gates and Piers, p. 63. Doors, p. 65. Four Windows, p. 69. Nine Windows, p. 71. Six Windows, p. 72. Designs for Chimney-Pieces, p. 77. Lord Charlemont's Chimney-Pieces, p. 79. Profiles for Doors, &c. p. 80. 83 Ornaments for Flat Ceilings, and for the Compartments of Ceilings, 84. Enrichments for a Flat Ceiling, and for Soffits of Arches, &c. ~~After which the Plate of Compartments for Caved Ceilings; and then that of Ornaments for Circular Coved Ceilings.~~

### Order of the Designs at the End of the Book.

28. Elevation of Lord Charlemont's Casine. 2d. Plans of the same. 3d. Lord Pembroke's Casine. 4th. Elevation of Lord Bruce's Casine. 5th. Plan of the same, and of Mr. Willoughby's Temple. 6th. Elevation of Mr. Willoughby's Temple. 7th. Lord Tilly's Temple. 8th. Design Incribed to J. Hall Stevenson, Esq; 9th. Design Incribed to T. Worley, Esq; 10th. Sir Thomas Kennedy's Design. 11th. Design Incribed to Sir Charles Hotham, Bart. 12th. Design Incribed to Robert Wood, Esq; 13th. Design Incribed to the Honourable Mr. Ward. 14th. Lord Pembroke's Triumphal Arch. 15th. Design Incribed to Thomas Brand, Esq; 16th. Design Incribed to his Grace the Duke of Richmond.

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## E R R A T A :

**P**REFACE, page ii. l. 6. for Architecture, read Architecturc. P. 6. l. 40. for where middles, r. where the middles, p. 15. l. 25. for eights, r. heights. ib. l. 28. for demensions, r. dimension. p. 19. l. 26. for plausible, r. plausible. p. 33. l. 38. for deformity, read deformity. p. 36. l. 10. for divert, r. divert. p. 78. l. 23. for of the Front of the Back walls; r. of the front, or of the Back walls: ib. l. 53. for bard, r. bare. p. 79. l. 34. for neither the Italians nor the English, r. neither the Italian nor the Englishman, p. 80. l. 40. for Pretto, r. Pietro, p. 84. l. 8. for whether r. either.

To the Lord's Church, Churchment,  
 as building & Churchment by the Lordship

and Chapel of the Lordship's Church at a Marino  
 most of the great & small, William Churchment



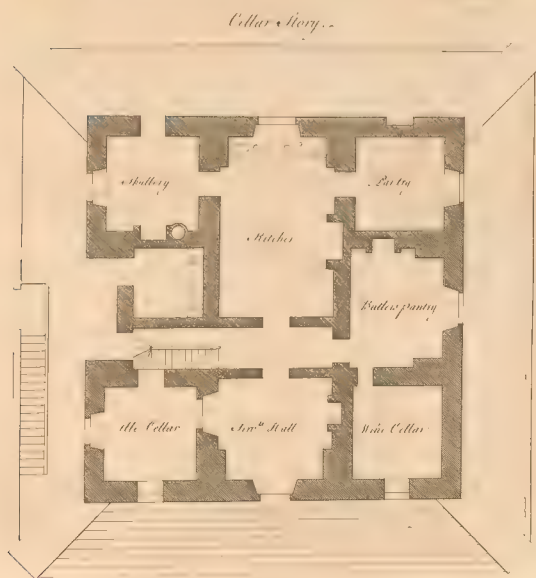
1791

1791

1791



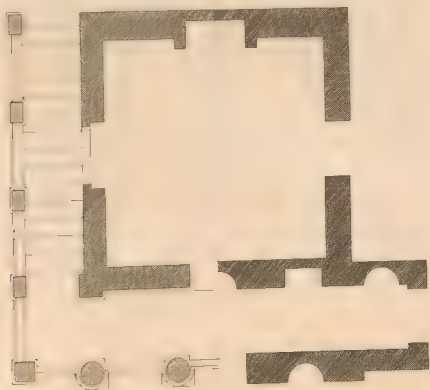
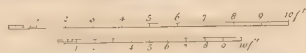
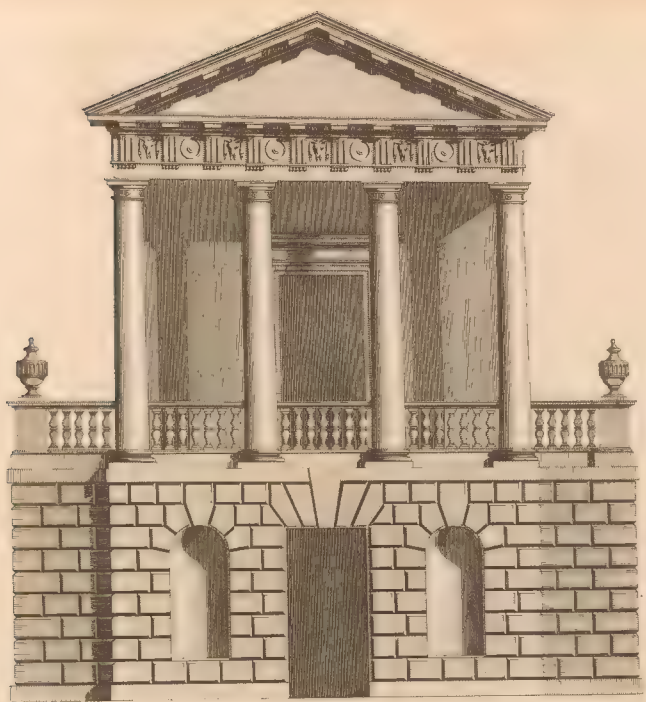




*Plans of the Lord Viscount Charlemont's Casino at Marino.*



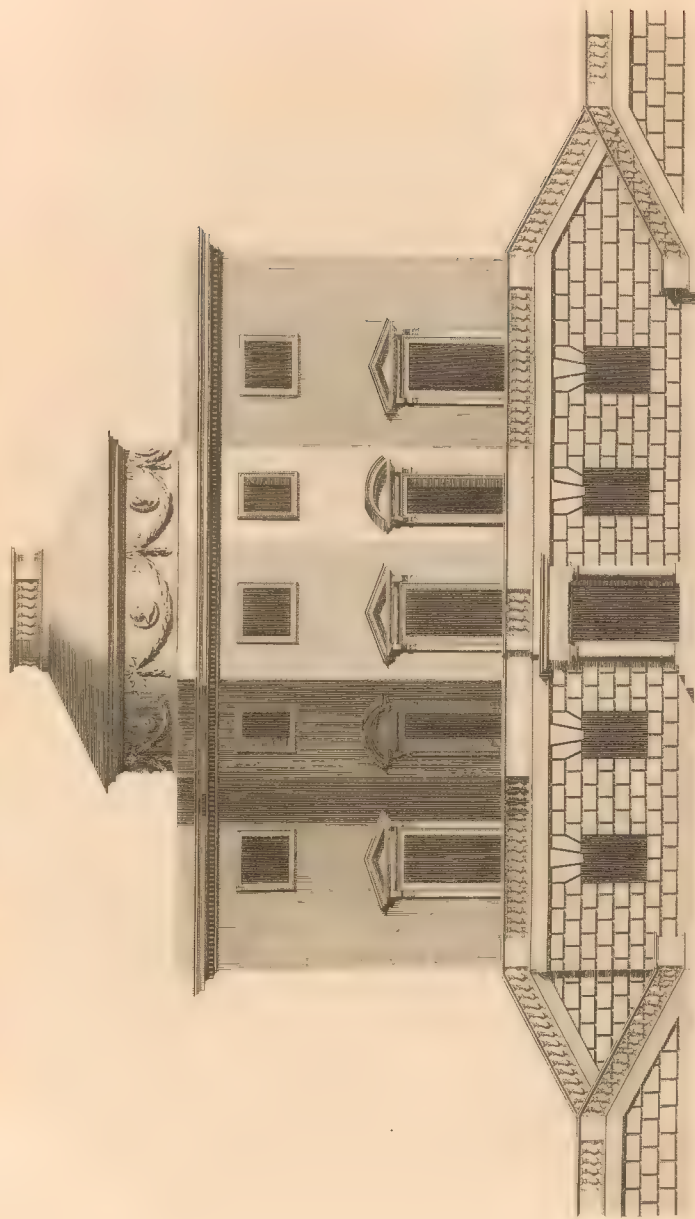




*For the Countess of Pembroke, this Design of the Casine at Willam, is humbly presented,  
By her Ladyships most obedient Servant, William Chambers.*



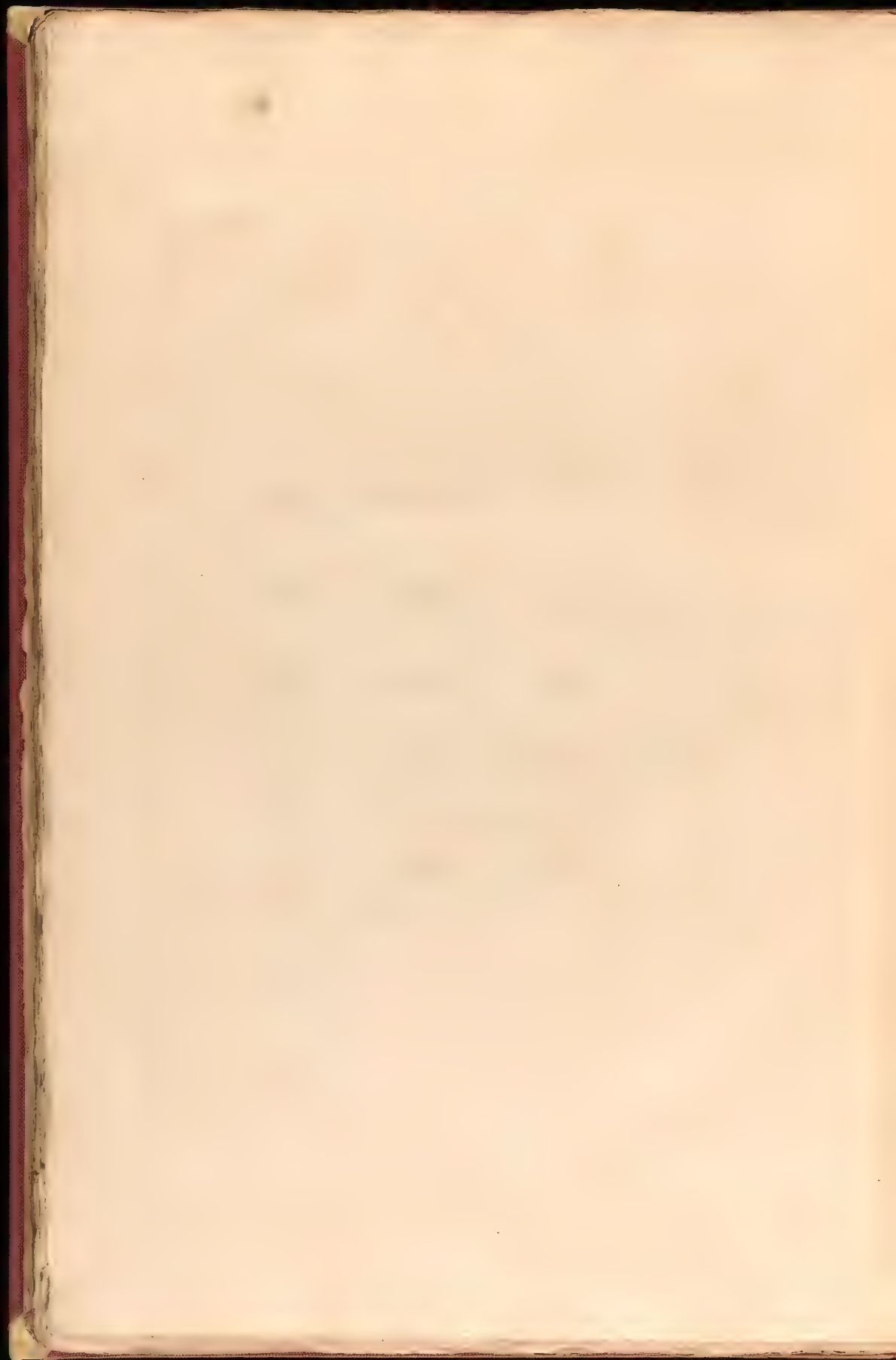
To Lord Bruce, this Design for the Casino at Springfield Hills in Hampshire is hereby presented,  
 by his Lordship's most Obedient Servant, William Chambers.

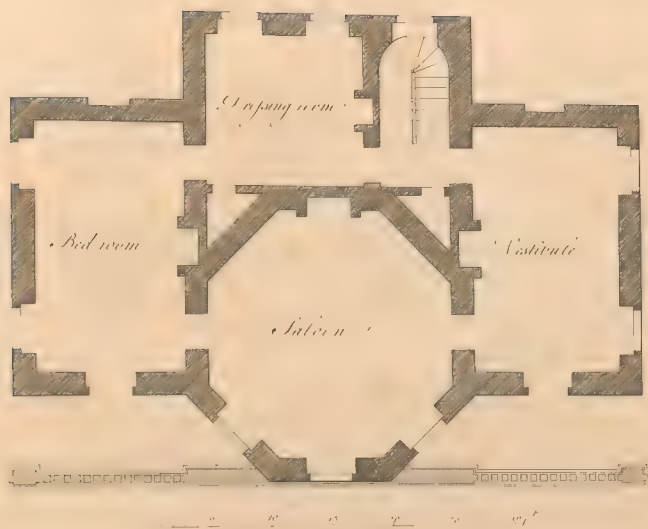


at Chambers

W. Chambers del.







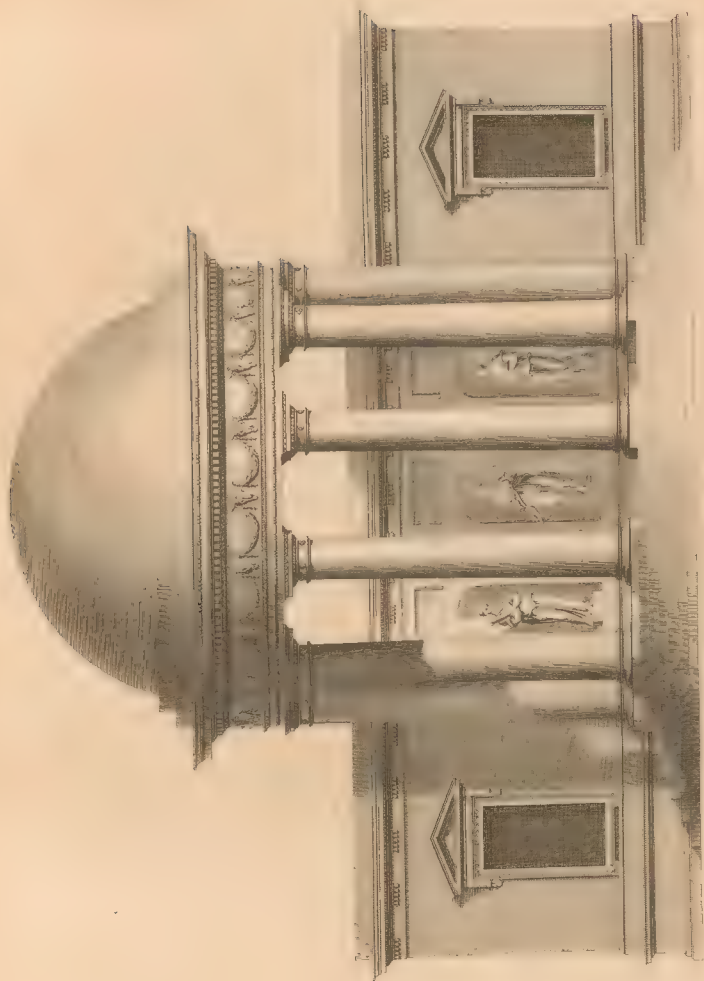
*the principal floor of Lord Bunsen's Casene*

*Plan of the Wiltshire temple*









To Henry Wallingford Esq. who I hope is nearly completed  
by his most Obedient Servant, William Chambers.

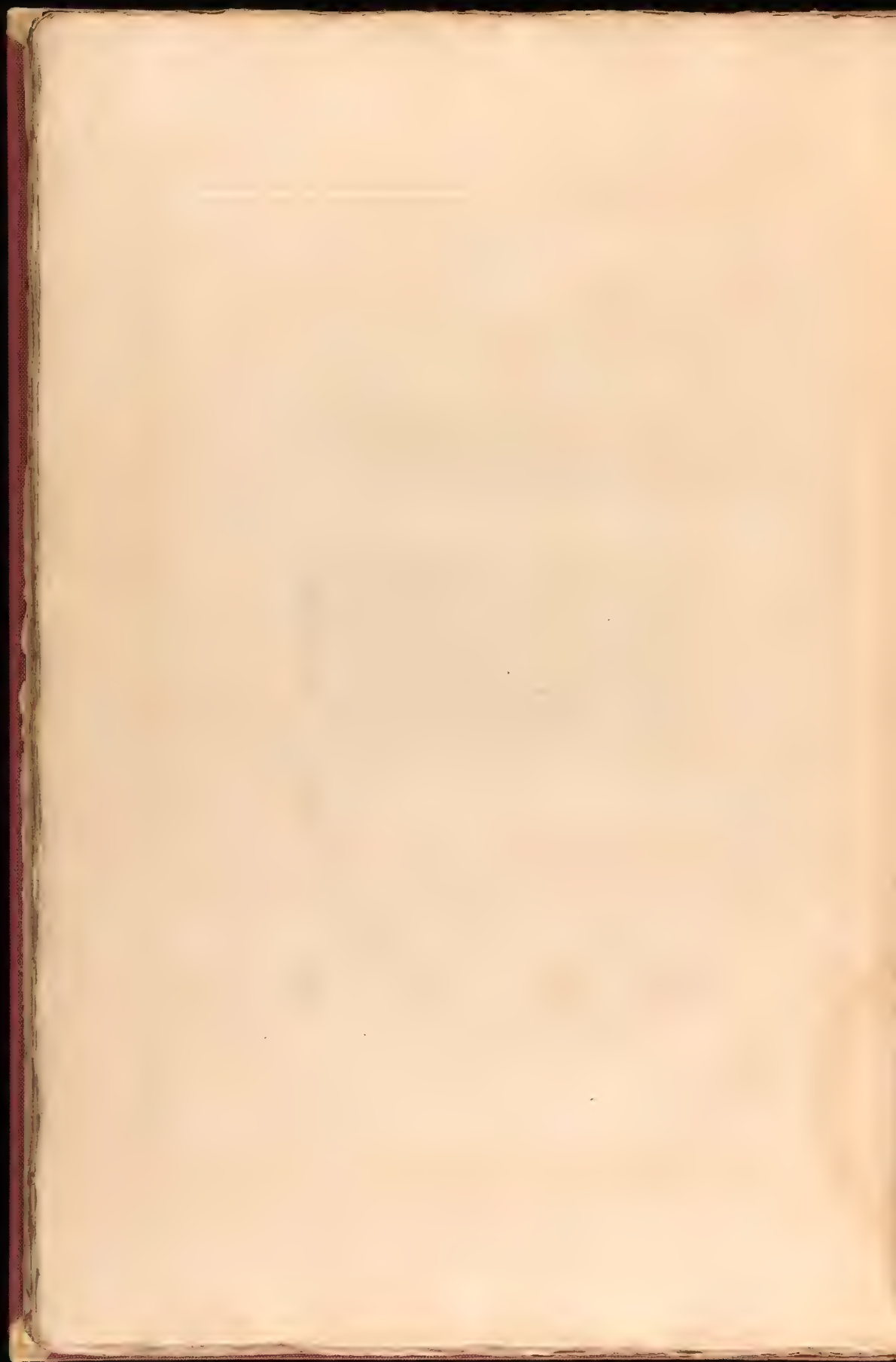




*To the Earl of Salisbury, this Design is humbly Inscribed,  
by his Lordship's most Obedient Servant, William Chambers.*

*Perseus engraving*





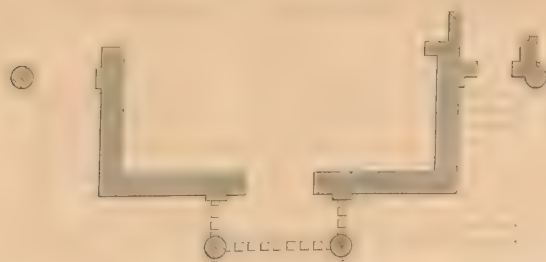


To Thomas Worship of Meringham Esq; this Design is humbly Inscribed  
by his most Obedient Servant, William Chambers.

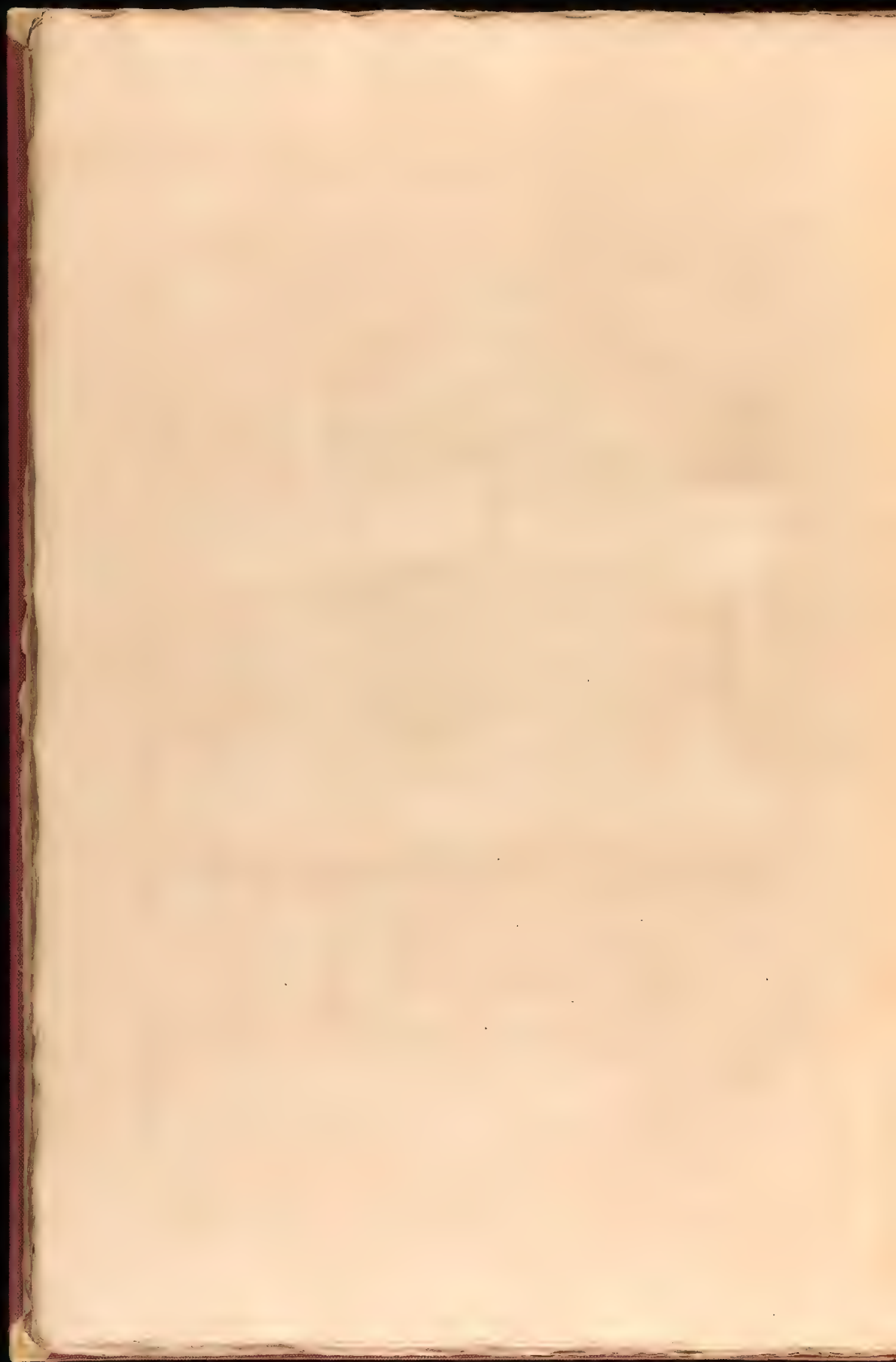
W. Chambers Sculp.

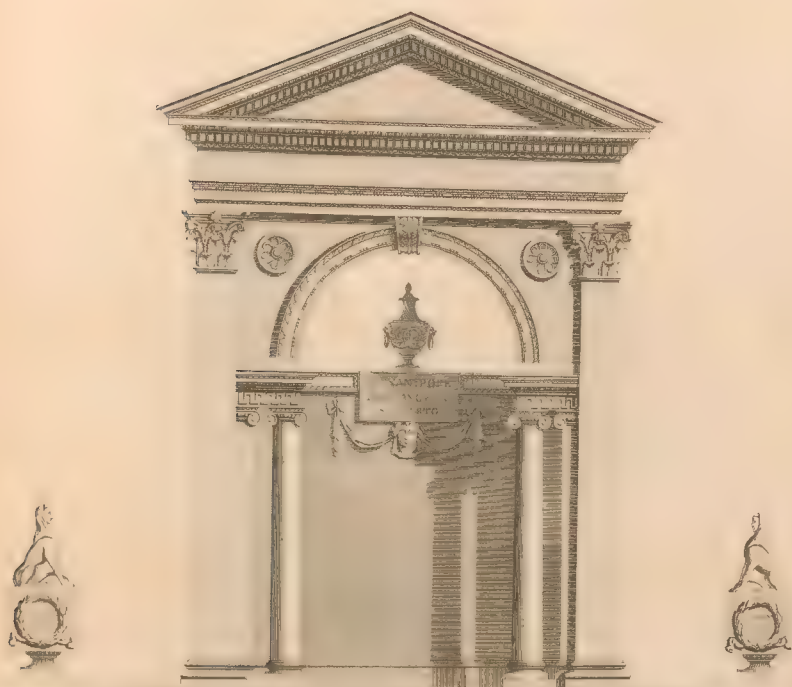






To Mr. Thomas Kennedy of Culleear, Esq. this Design is humbly Inscribed  
by his most Obedient Servant, William Chambers.

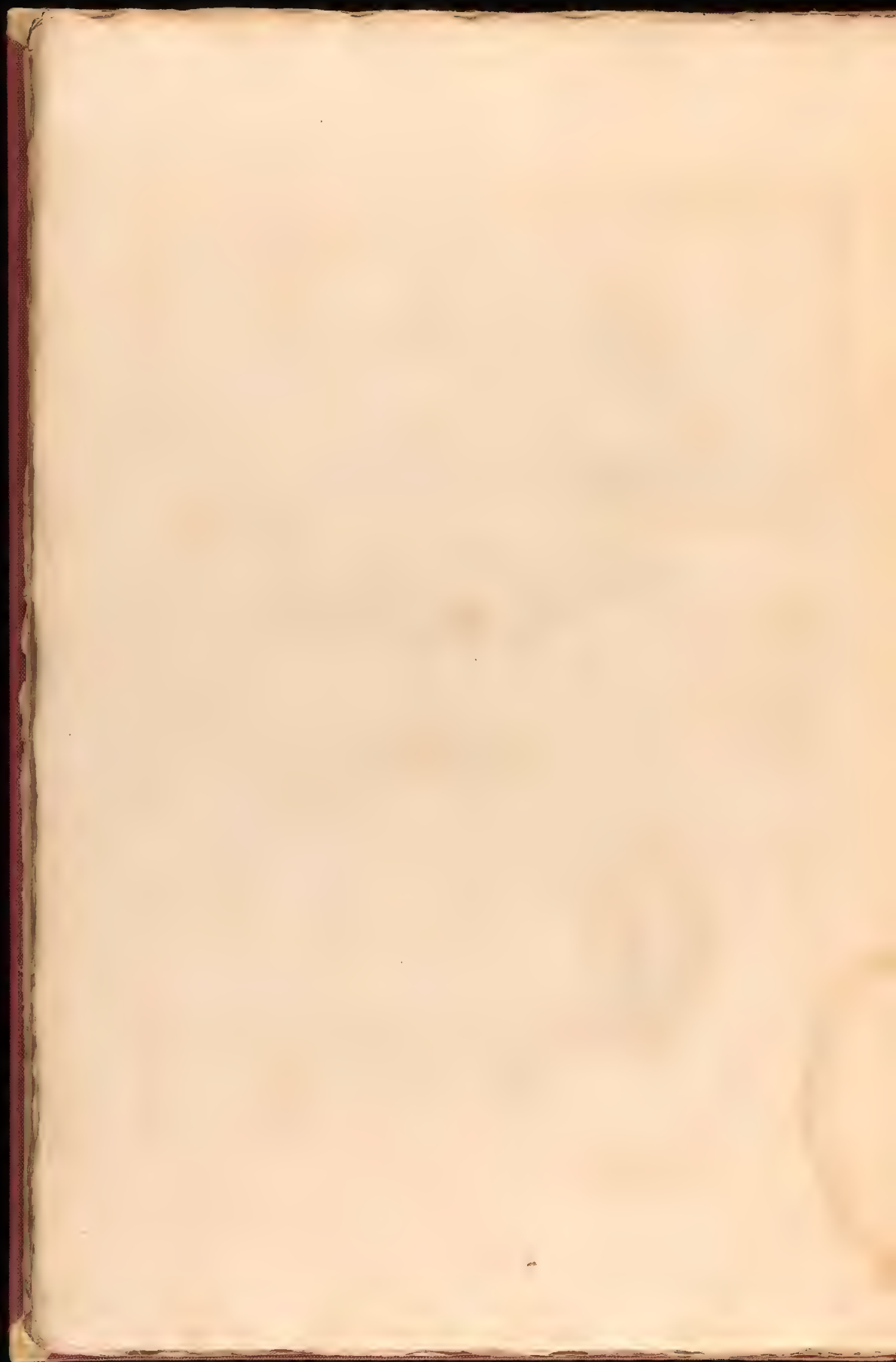




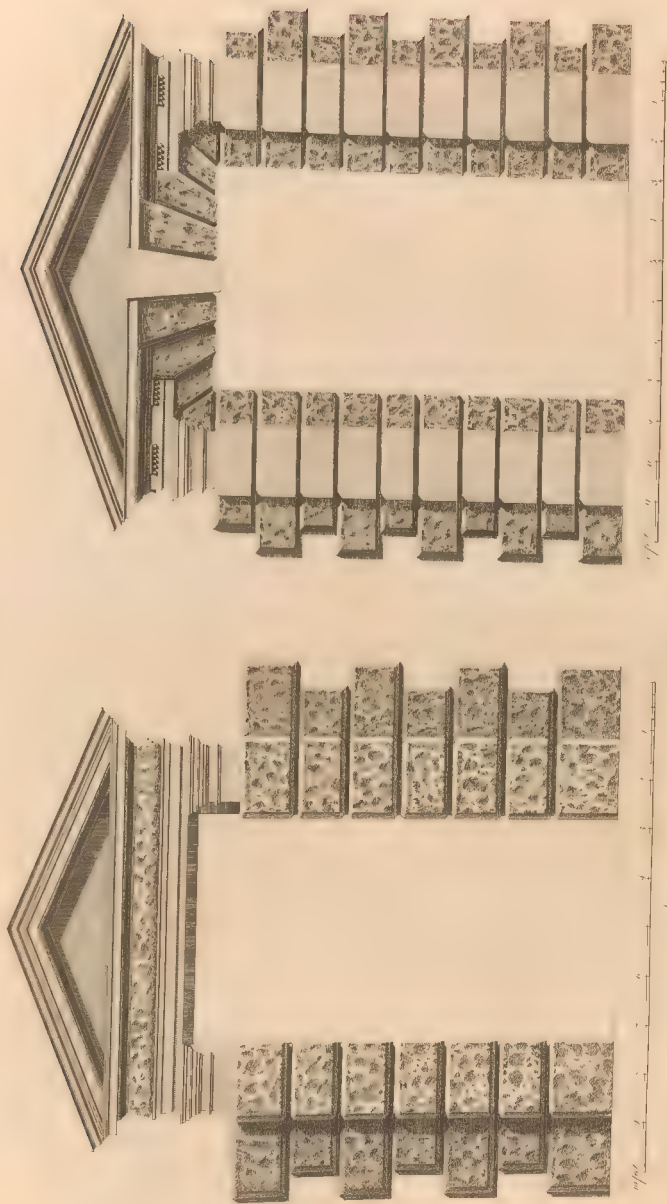
*Do<sup>r</sup> L<sup>o</sup> Charles Hestham Bar<sup>r</sup>, this Design is humbly Inscribed  
by his most Obedient Servant Will<sup>m</sup> Chambers.*

*Perseus & Co. Sculp.*





*Castellum consists of a garden near the great theatre at Vienna  
 by Andrea Palladio.*



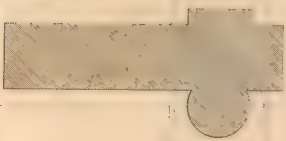
*In Robert Wood's Essay, these Designs are falsely described by  
 his most illustrious friend William Chambers.*

*Engraved by*

*A. Duncanson*

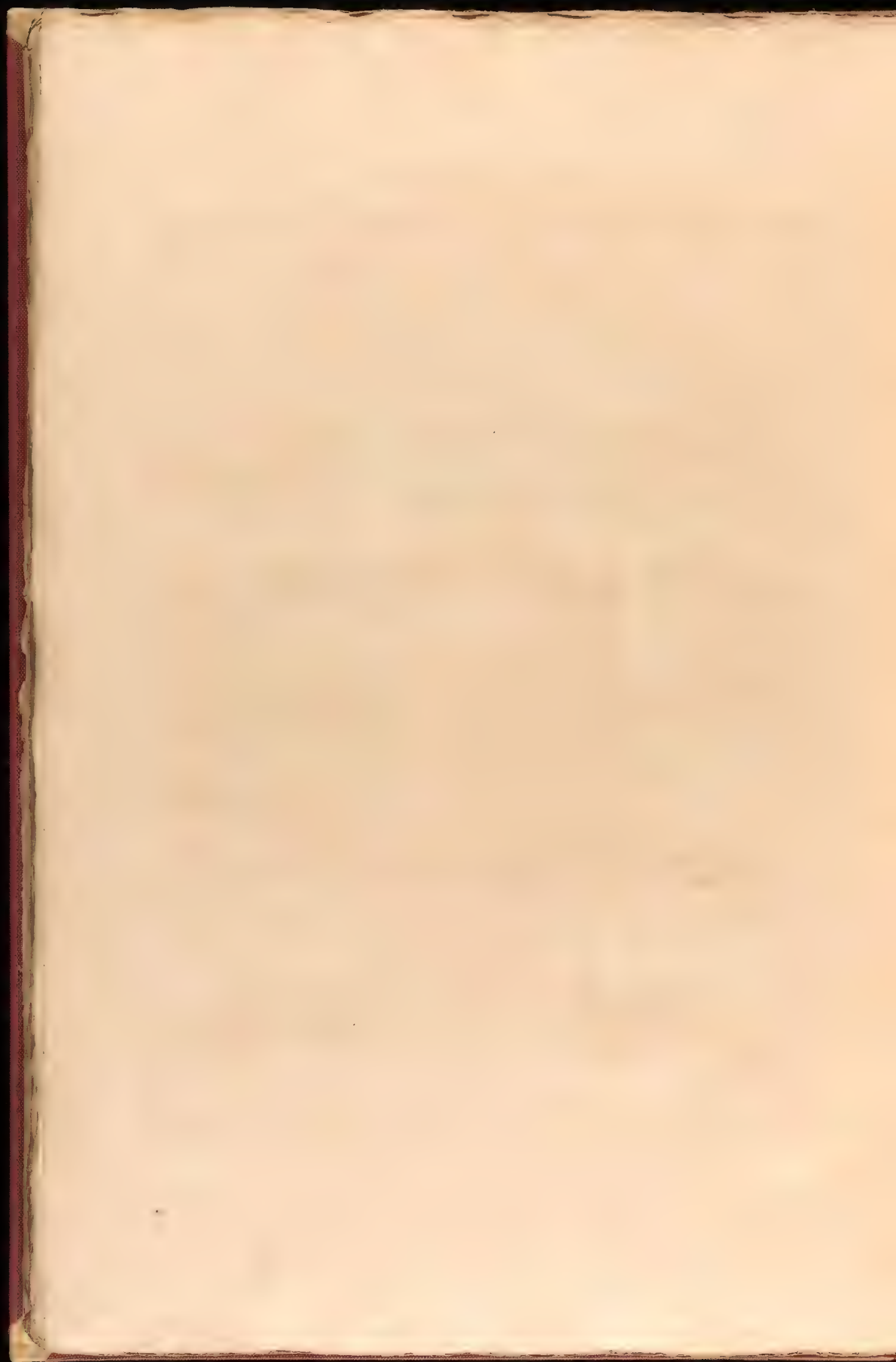


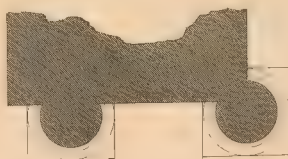
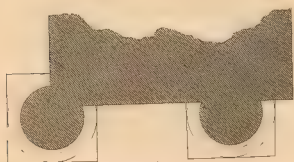




*To the Honorable W. Ward, this Design  
is humbly Inscribed by his most Obedient Servant, W. Chambers.*

*Printed by*

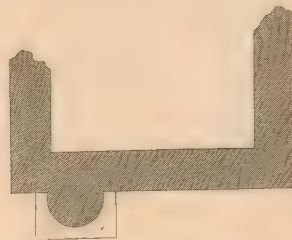
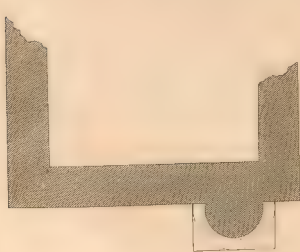




*In Thomas Brand of the Hall in the County of Hertford Esq<sup>r</sup>  
this Plate is humbly Inscribed by his most obedient Servant, W<sup>m</sup> Chambers*

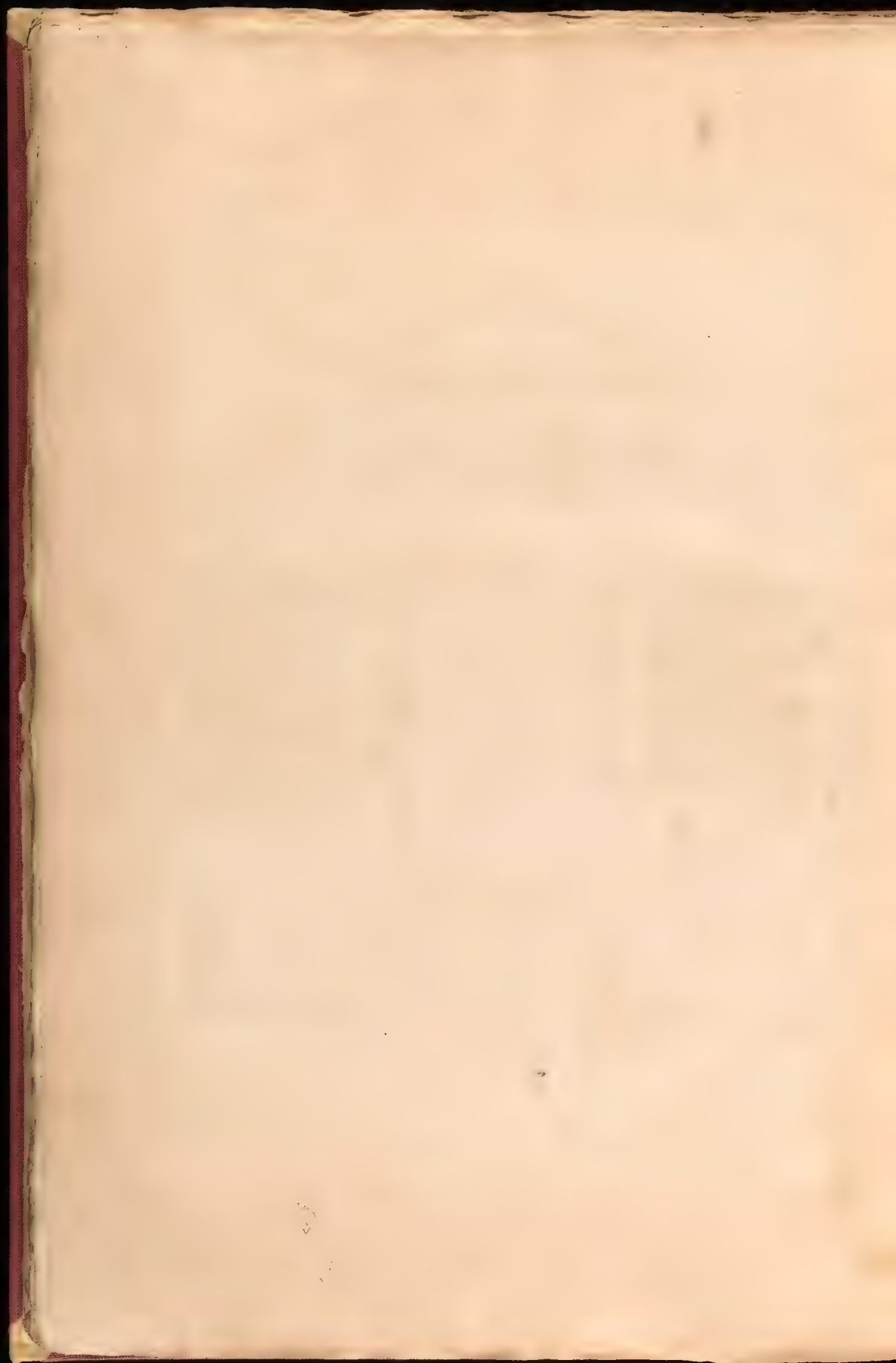






*To His Grace the Duke of Richmond, Lenox, & Rutland, this Design is humbly presented,  
by his Grace's most Obedient Servant, William Chambers.*

*By Robert Smith*















SPECIAL 85.B  
OVERSIZE 27592  
NA  
3467  
C44  
1759



